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ABSTRACT

Previously published or publicly accessed data, as well as two new sources--Postsecondary Transcript Sample (PETS) of the National Longitudinal Study of the High School Graduating Class of 1972 (NLS), and the recently completed 5th Follow-Up Survey (1986) of the NLS cohort, with original calculations derived--were used for this statistical study of higher education in America. Descriptive rather than analytic statistics were used, and projections about the future were avoided. The data emphasized present day information, and focused on the formal higher education sector in America (undergraduate education in particular). The topics considered by section in this study are: institutions (classifications and enrollment); the state framework (enrollments, capacity, and support); students (aspirations; access, and flows); faculty; governance (state, institution, and faculty); and assessment. Major themes from these data include a decline in social sciences and rise of applied fields, a rise in comprehensive colleges, a decline in educational aspirations of high school graduates in the United States, and a reappearance of student distance from learning. Numerous tables and graphs illustrate the major points (SM)

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A BASIC STATISTICAL PORTRAIT OF AMERICAN HIGHER EDUCATION, 1987

by Clifford Adelman*

(Prepared for the Second Anglo-American Dialogue on Higher Education)

The following pages present the major statistical parameters and frameworks for understanding the state of higher education in the United States in 1987. Of necessity, the topics are selected, not exhaustive; and I have sought to avoid duplicating other information to be presented at this Conference by more knowledgeable authorities.

I have followed seven principles in selecting the data:

1) With two notable exceptions, I used previously published or publicly-accessible tables. In many cases, I have recalculated, aggregated, rearranged, and/or reclassified the data for this presentation. The two data bases that are new to American-- let alone foreign--audiences are the Postsecondary Transcript Sample (PETS) of the National Longitudinal Study of the High School Graduating Class of 1972 (NLS), and the recently-completed 5th Follow-Up Survey (1986) of the NLS cohort. The calculations in these cases are original.

2) I have chosen to exclude data in which I am not confident, no matter how "authoritative" the source. Both the NLS and High School and Beyond (High School Graduating Class of 1980) data are questionable concerning important issues such as transfer and persistence, and until the data are cleaned, one should avoid those topics. Likewise, while some data concerning credits taken by Bachelor's degree recipients in different fields have been published on the basis of the Transcript Samples of both NLS and HSB, my current work with those data has convinced me that they are not yet usable.

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3) I have chosen descriptive--and not analytic--statistics. They represent the "that," not the "why." No doubt many questions will be raised about the data, and there will be more knowledgeable authorities than I at this Conference to speculate on correlation and cause. It is <u>partly</u> for this reason that the data skip over the "black box" of what students actually do between matriculation and exit (with or without credentials) from the system. Since I relied wholly on <u>national</u> data sets, in which the "black box" information is comparatively low, it is difficult to draw valid system-wide conclusions concerning the relationship between student experience in higher education and outcomes.

4) While historical comparisons may be instructive, the principal focus of these data is on the present. Where data from the recent past are used, my intent is to illustrate a key aspect of a present condition.

5) I have eschewed projections. The future is a dangerous business. We have been wrong too many times. For example, long ago we predicted declines in college enrollments for the 1980s so severe that, in Frank Newman's words, our major challenge would be "learning how to live under water." While Dr. Newman is both very wise and very witty, the declines simply have not materialized.

6) The data focus on the formal higher education sector in the U.S., and, within that sector, on undergraduate education. The booming phenomenon of employer-provided postsecondary education should not be ignored, but for our purposes, is distracting. Likewise, while I have included some data on graduate enrollments and degrees conferred, our principal concerns are with access and quality at prerequisite levels of education.

7) Lastly, I have tried to confine the presentation to those aspects of higher education in the U.S. that would be of particular interest to representatives of higher education systems in other countries. There are common points of reference subject to comparative analysis (e.g. institutional differentiation), and unique characteristics of the U.S. system that are powerful explanatory variables (e.g. the state role in higher education).

With these principles in mind, our major topics are:

A. Institutions: the providers of higher education.
B. The State Framework: enrollments, capacity, finance.
C. Student Access: who goes where and when?
D. Student Outcomes: attainment and achievement.
E. Faculty: where they work; what they do; who will serve
F. Governance: state, institution, faculty.
G. Special Topic: Assessment

For purposes of understanding access and quality issues in U.S. higher education, what are the most important themes of this presentation of data? What do we learn--particularly in light of the new data from the longitudinal and transcript studies, but also from reconfigurations of other data--that has not been stressed in the literature to date?

o The decline in educational aspirations of U.S. high school graduates, despite rising postsecondary enrollments, is a very serious problem that has not received sufficient attention. While the phenomenon evidences different degrees and effects according to population sub-groups, it can be observed across the entire gamut of student characteristics.

o The rise of the comprehensive college of low/medium selectivity as the paradigm of American higher education. The typical U.S. college student can now be described as a Business Administration major in a state college. This individual ranked in the 2nd quartile of his/her high school class, and scored between 800-900 (combined) on the SAT. Any analysis of who goes to college where in the U.S. must take account of this modal paradigm.

o The reemergence of student "distance" from learning as a result of increasing institutional size and increasing faculty orientation to research/publication as opposed to instruction. In the 1960s, we analyzed this phenomenon under the rubric of "alienation." In the 1980s, it is more allied to the decline of educational aspirations, i.e. many students are reluctant postsecondary attendees to begin with, and seek degrees only because they are the minimum credentials accepted by employers.

o The decline of the social sciences and the rise of applied fields in terms of enrollments, degrees conferred, and quality of educational outcomes. The case of decline is far more severe here than in the humanities (science and engineering fields generally have been unaffected); but the rise of applied fields is only quantitative. At the undergraduate level, one should pay more attention to trends in applied fields (e.g. Communications) than "pre-professional" fields" (e.g. Business Administration).

There are other themes that cut across the presentations of data here, but these strike me as most significant. Certainly we can--and will--spend some time explaining them.

Section I

Institutions: Classifications and Enrollments

By custom and usage, there are a number of ways in which institutions of higher education (hereafter abbreviated, "IHEs") in the U.S. are classified. Four such ways are illustrated by the tables in this Section:

1) By control and level (Table 1). This is a simple 2x2 matrix that tells us whether institutions are public or private (control), and whether the credentials they award are pre-baccalaureate (2-year) or baccalaureate and above (4-year). Enrollments are not at issue.

2) By enrollment size and share (Table 2). This classification highlights the ways in which students are dispersed through the system. Enrollments are presented in terms of headcounts (not Full-Time Equivalents, or "FTEs"), and do not distinguish between undergraduate and graduate status. Control and level often enter into the presentation of this classification.

3) By mission (Table 3). This classification (the Carnegie system) distinguishes 10 types of institutions principally according to level of degrees offered, range of programs, comparative emphasis on graduate studies and research, and other characteristics of an institution's relationship to its constituencies. Both outputs (e.g. the number of degrees awarded in different fields) and some inputs (e.g. Federal R&D dollars received) are considered in this scheme. Control is not an issue.

4) By selectivity (Table 4). This classification is confined to baccalaureate degree-granting institutions, and illustrates student flow by ability level. Graduate students are not at issue here, as the selectivity measure applies only to entering undergraduates. But more finely discriminated categories of control and level play a role in this analytic framework.

What do the data in the following four tables indicate and suggest?

- The rate of growth in the system (measured by net institution formation) has slowed dramatically in the most recent decade (15% v. 26% growth in the previous decade). The most significant decline in growth rate occurred among 2-year public colleges (4% v. 121%!!! in the previous decade). Table 1.

- Most of the institutional formation and demise in recent years has taken place among private 2-year and 4-year IHEs. The highest growth rate can be found in the category of private

2-year institutions, which behave more like proprietary schools than public community colleges. In 1985-6, half of the private 2-year institutions were organized as profit-making entities. Table 1.

- o Public 4-year IHEs are now the principal operators of branch campuses, that is, miniature replications of an institution established in locations distant from the main campus. In the U.S., the branch campus is a mechanism of access. According to the initial High School and Beyond survey of the high school graduating class of 1980, 51% of those who planned to attend college felt that it was "very important" or "somewhat important" to live at home during their college years, and the 1986 Cooperative Institutional Research Project data indicate that 30% of full-time freshmen live at home, and 62% attend college within 100 miles of their home. Proximity is thus a critical ingredient in access, and branch campuses enhance it. Tables 1 and 3.

- o College enrollments are concentrated in relatively few institutions: 3% of U.S. institutions enroll 23% of students at all levels; 14% of the IHEs enroll 73% of the students. The population of the average higher education environment for nearly 3/4ths of our students is thus just under 20,000--far above the size of the average incorporated community in the U.S. Students entering those institutions must be able to negotiate large and complex environments. Table 2.

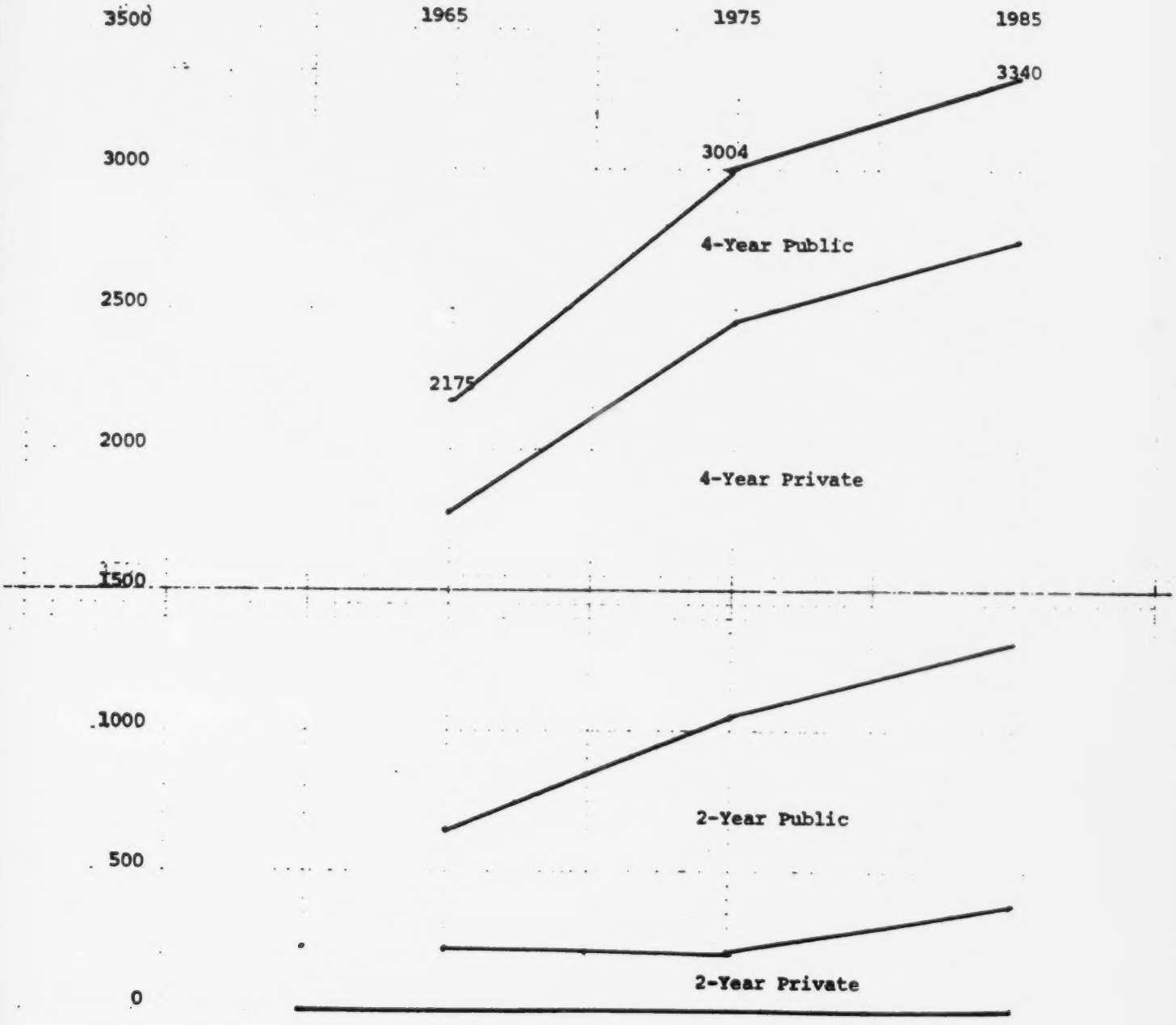
- o The modal paradigm of 4-year college enrollment in the U.S. is a public comprehensive institution of low to moderate selectivity. Basically, that is where America goes to college. Tables 3 and 4.

- o Comprehensive Institutions enroll the largest proportion (45%) of 4-year college students, though their share of total higher education enrollment has fallen slightly (30% to 27%) over the past 17 years. Table 3.

- o Institutional missions change. The growth in total number of institutions does not account for all of the changes by Carnegie category. For example, the number of Liberal Arts Colleges has declined from 721 in 1970 to 564 in 1987 while the number of Comprehensive Institutions has risen from 456 to 601. These changes reflect the efforts of some Liberal Arts Colleges to offer more occupational and professional degree programs and/or to expand to Master's level programs. As a result, they are no longer classified as Liberal Arts Colleges, rather as Comprehensive Institutions. This inference, combined with the previous observation, is in agreement with trends in the proportion of Bachelor's degrees conferred in occupational and professional fields. Table 3.

Figure 1

NUMBERS OF INSTITUTIONS OF HIGHER EDUCATION, 1965-1985
by Level and Control



For detailed data, see Table 1.

Basic Numbers of Institutions of Higher Education, 1964-1985

Year	Total	4 Year			2 Year			Branch Campuses Included in Tot.					Residual
								4 Year			2 Year		
		All	Pub	Priv	All	Pub	Priv	Total	Pub	Priv	Pub	Priv	Total
1985-1986	3340	2069	566	1463	1311	932	379	185	105	9	67	4	3155
% of Tot.		60.7%			39.3%			5.5%					
% of All			27.4%	72.6%		71.1%	28.9%						
% Decade Change	11.2%	10.9	5.4	10.1	15.2	4.0	56.6	(28.0)					14.9%
1974-1975	3004	1866	537	1329	1138	896	242	257	90	32	129	6	2747
% of Tot.		62.1%			37.9%			8.6%					
% of All			28.8%	71.2%		78.7%	21.3%						
% Decade Change	38.1%	22.7	36.6	17.8	74.0	120.7	(2.4)	N.A.					26.3%
1964-1965	2175	1521	393	1128	654	406	248	----------Not Reported--------					2175
% of Tot.		69.9%			30.1%								
% of All			25.8%	74.2%		62.1%	37.9%						
Institut. Closings, 1974-1985	89	65	1	64	24	5	19						

Source: Thomas D. Snyder. Digest of Education Statistics, 1987. Washington: U.S. Government Printing Office, 1987. Adapted from Tables 143 (p.165) and 144 (p.166).

TABLE 2

Institutions of Higher Education, Size and Enrollment Share, 1985

Size	Number of Institts.		Enroll. (Mill.)		Share	
> 20,000	102		2.811		23.0%	
> 10,000/<20,000	345		6.088		49.7%	
Public		88%		89.5%		44.5%
Universities		34%		42.8%		21.3%
2-Year Insts.		33%		29.2%		14.5%
>1,000/<10,000	1587		2.778		22.7%	
< 1,000	1267		0.570		4.7%	
Public		13%				
2-Year Insts.		34%				

Change in Average Size of Institutions, 1970 - 1985[1]

	All 2-Year	All 4-Year
By Total Enrollment:[2]		
1970	2495	3819
1985	3654	4029
% Change	46.5%	5.5%
By Full-Time Equivalence:[3]		
1970	1704	3135
1985	2156	3287
% Change	26.5%	4.8%

Source: Digest of Education Statistics, 1987. Table 102 (p.122) Table 113 (p.132), and Table 145 (p.167).

Notes:
1. The greatest increases were in numbers of 2-year colleges enrolling more than 20,000 students; the greatest decreases were in numbers of 4-year colleges enrolling less than 10,000 students.

2. Better measure for 4-year colleges.

3. Better measure for 2-year colleges.

TABLE 3

Carnegie Classification of Institutions of Higher Education

Classification:	Number of Institutions 1970	1976	1987	Percent and (Enroll %) 1970	1976	1987
Research Univs. I	52	51	70	1.6% (12.9)	1.7% (10.2)	2.1% (12.8)
Research Univs. II	40	47	33	1.4 (7.2)	1.5 (7.2)	1.0 (5.0)
Doctorate-Granting Univs. I	53	56	51	1.9 (7.5)	1.8 (7.2)	1.5 (5.3)
Doctorate-Granting Univs. II	28	30	59	1.0 (3.8)	1.0 (2.7)	1.7 (4.6)
Comprehensive Institts. I	323	381	427	11.4 (24.8)	12.4 (23.5)	12.6 (24.1)
Comprehensive Institts. II	133	213	174	4.7 (4.7)	6.9 (4.9)	5.1 (2.7)
Liberal Arts Colls. I	146	123	125	5.1 (2.2)	4.0 (1.4)	3.7 (1.5)
Liberal Arts Colls. II	575	460	439	20.3 (5.9)	15.0 (3.4)	12.9 (3.2)
2-Year Institutions	1,063	1,146	1,368	37.5 (27.5)	37.3 (35.6)	40.4 (36.7)
Specialized Institts.	424	559	643	14.9 (3.4)	18.2 (3.7)	19.0 (3.8)
TOTAL:	2,837	3,072	3,389			

In addition to a full range of baccalaureate programs, research universities give high priority to research and graduate programs, and award at least 50 Ph.Ds annually. The difference between class I and class II lies in the amount of federal support for R&D received annually.

Doctoral-granting institutions do not emphasize research and graduate programs as much as research universities. The distinction between class I and class II lies in the number and disciplinary distribution of Ph.D. degrees awarded annually.

Comprehensive Institutions offer graduate programs only through the Master's level, and, in addition, award more than half of their baccalaureate degrees in occupational or professional fields. The difference between class I and class II is wholly one of size (class II institutions enroll less than 2,500 students).

Liberal Arts colleges are primarily undergraduate in orientation and award more than half their degrees in arts and sciences fields. The principal difference between class I and class II is selectivity.

TABLE 4

Selectivity Estimates for 1456 Baccalaureate-Degree Granting Institutions[1] 1986

This classification is based on mean total SAT score (Verbal + Quantitative) for entering freshmen in 1986. For institutions using the ACT examination, scores were converted to the SAT scale. Total SAT scores range from 400 to 1600. The dividing lines between selectivity levels are the lowest benchmarks of those indicated for all institutional types.

Degree of Selectivity:	Very High (>1175)	High (1025)	Medium (875)	Low (<875)	Unknown
Institutional Type:					
Universities:					
Public	0	63	57	0	0
Private	25	17	26	0	0
Four-Year Colleges:					
Public	0	40	95	184	25
Private Nonsectarian	47	85	68	85	113
Private: Catholic	0	33	63	81	7
Private: Protestant	0	47	172	64	59
TOTALS:	72	285	481	414	204
	(4.9%)	(19.6%)	(33%)	(28.4%)	(14%)

Note: The table excludes 85 historically/predominantly black 4-year colleges and universities, public and private.

Source: Cooperative Institutional Research Project (CIRP). The American Freshman: National Norms for Fall 1986. Los Angeles and Washington: UCLA and the American Council on Education, 1986, adapted from tables on pp. 105, 108, and 110.

Section II

The State Framework: Enrollments, Capacity, Support

Since nearly 80% of U.S. students (undergraduate and graduate) attend public institutions of higher education, and since public institutions are both substantially funded and governed by state authorities, state-level analysis of higher education data is a standard form for presenting information on U.S. higher education.

Using the 2x2 (control and level) matrix to present both numbers of institutions and total enrollments, and adding categories of percentage of public enrollment, part-time enrollment, and post-baccalaureate/graduate enrollment, one can perceive considerable diversity among the states.

For example (see Table 5), 7 states evidence part-time enrollment rates of 50% or more across all institutions: Alaska, Arizona, California, Florida, Illinois, Maryland, and Nevada. Six of these states are among the 10 in which enrollment at 2-year public colleges exceeds enrollment at 4-year public colleges. Since enrollees at 2-year institutions are more likely to be part-time than full-time students, that might explain the high percentage of part-timers. But this observation explains neither the phenomenon of the 7th high part-time ratio state (Maryland), nor the four states (Oregon, North Carolina, Washington and Wyoming) in which the 2-year college ratio is high but the part-time ratio is low.

Another similar conundrum concerns the relationship between the percentage of public enrollment and percentage of post-baccalaureate and graduate enrollment in a state. Private universities award a higher percentage of graduate degrees than they do of undergraduate degrees. One would thus assume that a low ratio of public college enrollment/total enrollment in a state would correspond to a high percentage of graduate enrollment. But this "conventional wisdom" is borne out in only half the cases.

Key variances can also be found in the building blocks of state financing of public higher education, and Table 6 (and its "guide") attempts to explicate the relationships among those building blocks. Here the states are ranked according to their actual budget appropriations per student for core teaching and learning functions in relation to tax revenue per capita. This ranking says nothing about the quality of education offered. Indeed, it will surprise U.S. observers to find some highly-regarded state systems (e.g. New York, Illinois, Ohio) as ranking fairly low in the terms of this analysis.

State Higher Education Enrollment Data, Fall of 1985

State	Public Institutions				Private Institutions				All Institutions				
	Num 4 yr Inst	Enroll (000)	Num 2 yr Inst	Enroll (000)	Num 4 yr Inst	Enroll (000)	Num 2 yr Inst	Enroll (000)	Num	Enroll (000)	% Public Enroll	% Part-Time Enroll	% Post-Bacc & Grad.
Alabama	16	104.7	37	54.0	17	16.8	8	3.6	78	179.3	88.5	29.3	10.5
Alaska	3	10.5	9	16.0	3	1.0	0	---	15	27.5	96.5	66.9	6.6
Arizona	3	84.1	16	117.9	9	13.7	3	1.4	31	216.9	93.2	55.9	11.1
Arkans.	10	53.9	10	12.2	11	8.9	5	3.0	36	78.0	84.8	29.4	11.3
Calif.	31	463.7	106	980.5	126	195.0	25	11.2	290	1650.4	87.5	55.1	11.3
Colo.	13	100.5	15	41.5	12	15.3	8	4.0	48	161.3	88.0	36.6	13.8
Connect.	7	57.9	17	40.7	21	59.0	3	1.7	48	159.3	61.9	47.8	20.3
Delaware	2	20.5	3	7.5	3	4.0	0	---	8	31.9	87.7	36.1	7.7
D.C.	2	12.7	0	---	17	66.1	0	---	19	78.9	16.1	39.8	40.2
Florida	9	146.3	28	215.9	38	82.1	12	7.0	87	451.4	80.2	50.2	11.1
Georgia	18	114.6	16	34.3	31	38.7	15	9.1	80	196.8	75.7	32.6	16.3
Hawaii	3	23.2	6	20.0	3	6.7	0	---	12	50.0	86.4	42.5	11.8
Idaho	4	28.5	2	5.1	3	2.1	1	6.9	10	42.7	78.7	33.4	12.3
Illin.	12	187.2	47	333.0	87	146.3	16	12.2	162	678.7	76.6	50.6	13.4
Indiana	13	159.3	15	34.5	37	50.8	10	6.0	75	250.6	77.3	34.5	14.1
Iowa	3	69.9	16	39.8	34	40.6	6	2.5	59	152.9	71.7	25.5	14.2
Kansas	8	83.9	21	43.2	20	12.7	3	1.4	52	141.4	89.9	42.6	15.7
Kentucky	8	87.1	1	23.8	21	20.8	15	10.1	45	141.7	78.3	33.3	14.3
Louis.	14	138.2	6	14.9	10	22.3	1	1.7	31	177.2	86.4	27.3	15.2
Maine	8	28.7	5	4.5	12	17.8	5	1.2	30	52.2	63.6	44.4	5.4
Marylnd	13	104.0	19	94.9	22	32.3	2	0.4	56	231.6	85.9	53.0	13.7
Massach.	14	110.6	17	75.0	71	216.2	19	19.4	121	421.2	44.1	37.9	18.9
Michigan	15	229.0	29	205.3	42	63.0	6	10.1	92	507.3	85.6	47.4	11.8
Minn.	10	127.3	19	46.7	32	42.7	8	4.4	69	221.2	78.7	36.0	12.2
Mississ.	9	52.6	16	38.1	12	9.0	5	1.5	42	101.2	89.6	24.2	10.5
Missouri	13	111.0	15	57.9	54	69.5	10	2.9	92	241.1	70.1	40.6	15.7
Montana	6	28.5	3	3.5	3	3.0	4	0.9	16	40.0	80.0	26.8	11.0
Nebraska	7	55.1	6	26.1	13	15.9	2	0.6	28	97.8	83.0	42.1	13.3
Nevada	2	21.3	4	22.1	2	0.3	0	---	8	43.7	99.3	69.9	6.4
N.Hampsh.	4	20.6	8	6.1	12	23.0	4	2.6	28	52.3	51.1	31.6	12.6

N.Jersey	14	130.9	17	106.4	26	58.4	3	1.9	60	297.7	79.7	49.5	14.9
N.Mexico	6	51.3	11	14.8	3	2.2	0	---	20	68.3	96.8	45.5	12.1
New York	41	320.5	45	242.7	170	400.7	45	36.2	301	1000.1	56.3	37.2	17.4
No.Caro.	16	128.7	58	138.3	36	53.4	18	6.8	128	327.3	81.6	39.5	9.5
No. Dak.	6	27.5	5	7.3	4	2.3	4	0.8	19	37.9	91.8	21.5	9.8
Ohio	22	260.5	37	118.6	64	99.0	19	36.5	142	514.7	73.7	39.8	13.3
Oklahoma	14	92.0	15	54.8	14	18.8	4	3.5	47	169.2	86.8	43.1	14.8
Oregon	8	59.6	13	60.0	24	18.0	1	0.3	46	138.0	86.7	38.6	12.0
Pennsyl	25	189.4	37	111.2	107	208.9	37	23.8	206	533.2	56.4	33.1	15.1
Rhode Is	2	22.8	1	12.6	10	34.5	0	---	13	69.9	50.6	37.4	11.7
So.Caro.	12	69.1	21	36.8	20	20.9	10	5.1	63	131.9	80.3	29.5	12.7
So.Dako.	7	23.3	0	-----	8	8.6	3	0.9	18	32.8	71.1	27.1	11.3
Tenness.	10	101.4	14	46.5	41	40.7	15	6.2	80	194.8	76.0	34.0	12.8
Texas	39	371.0	59	89.7	53	89.6	7	2.9	158	769.7	88.0	44.9	14.3
Utah	4	50.3	5	19.1	3	33.1	2	1.5	14	104.0	66.8	34.4	9.7
Vermont	4	15.2	2	3.6	14	10.7	2	1.9	22	31.4	60.0	28.3	10.2
Virginia	15	141.4	24	109.4	30	40.1	3	1.6	72	292.2	85.8	43.7	12.6
Washing.	6	77.9	27	123.6	18	28.9	2	1.2	53	231.6	87.0	36.7	9.8
West Va.	12	57.4	4	9.1	9	7.6	4	2.5	29	76.6	86.9	36.1	13.7
Wiscon.	13	154.5	17	84.2	29	34.7	4	1.7	63	275.1	86.8	34.0	11.1
Wyoming	1	10.1	7	14.1	0	----	0	---	8	24.2	100.0	43.5	8.4
U.S.Serv.	9	18.8	1	35.2	N.A.	----	N.A.	---	10	54.0	100.0	0.2	6.1
TOT.		5209.5		4269.7		2506.4		261.3		12246.9	77.4	42.2	13.5

Source: Thomas D. Snyder. Digest of Education Statistics, 1987. Washington: U.S. Goverment Printing Office, 1987. Adapted from Tables 117 (p.136), 120 (p.139), 121 (p.140) and 147 (p.169).

STATE CAPACITY AND EFFORT IN SUPPORT OF PUBLIC HIGHER EDUCATION: a Guide to the Tables

The states are the major financial players in the support of American higher education. In 1984, they provided 42.3% of all revenues to all institutions of higher education, public and private, and 60.7% of all revenues to public institutions (the corresponding figures for the Federal government are 13.8% and 13.0% respectively). But percentages are deceiving. Not all states evidence the same level of effort with respect to their public institutions, and in relationship to their constituencies and their tax capacity. Kent Halstead has developed a system for analyzing and comparing state efforts, and extracts from his 1986 data are presented in the table that follows.

It is important to note that these comparisons do not pretend to judge the quality of education offered by state systems of higher education. Nor are they able to distinguish among the different requirements for support corresponding to different mixes of institutional types. I have used seven of Halstead's analytic factors, presented as indices, with the US average equal to 100 in all cases. These seven factors are:

(1) STUDENT SOURCE. On the assumption that a state's primary responsibility in higher education is to provide opportunities for its own residents, we start with the number of high school graduates per 1,000 population.

(2) ATTENDANCE EXPANSION RATIO. Annual full-time-equivalent (FTE) enrollment in public institutions of higher education per high school graduate. High ratios indicate states that serve both a significant proportion of their own high school graduates and students from other states.

(3) SYSTEM FINANCIAL LOAD. The financial requirements on a state system in light of both enrollment and differential costs for the types of institutions in the system. The figure is expressed in terms of FTE students adjusted for funding rates associated with the institutional mix.

(4) TAX REVENUE. The result of tax capacity x tax effort. The index represents available wealth, and, as Halstead notes, "essentially identifies 'rich' versus 'poor' states."

(5) ALLOCATION. The proportion of state and local tax revenues appropriated for the education expenses of public institutions of higher education. This ratio suggests the relative importance of financing public higher education in relationship to other demands on a state's budget.

(6) APPROPRIATION. Indicates the average state support per individual student irrespective of the type of institution attended. The most important ratio here, though--and the one I have used to rank the states--is that of appropriation per student in relation to tax revenue per capita. As Halstead notes, this ratio "indicates a state's funding achievement relative to potential ability to pay."

(7) TUITION. Tuition revenues per student (minus state student aid) expressed in an index of relation to System Financial Load (factor #3). The index expresses the role tuition plays in meeting the financial requirements of the system.

TABLE 6

State Capacity and Effort in Support of Public Higher Education, 1985
(states ranked by Column 6B)

	(1) STUDENT SOURCE	(2) ATTENDANCE EXPANSION	(3) FINANCIAL LOAD	(4) TAX CAPACITY x EFFORT	(5) ALLOCATION	(6) APPROPRIAT.		(7) REVENUE
	HS Grads per 1k pop. (US=11.4) Index	FTE Pub Studs. per HS grad (US=2.58) Index	Pub. Studs. Adjusted per 1k pop. (US=29.6) Index	Tax Revenue $/capita (US=$1,305) Index	Tot. Educat. Appropria. % of Tax Rev. (US=8.6%) Index	Adj. Educat. Appropria. $/student[1] (US=$3,785) Indices A	B	Tuition Rel.to Fin Load Index (US=$1,116) Index
Tennessee	90	90	83	65	132	106	165	105
Alabama	95	107	103	66	164	107	161	104
S.Carolina	104	78	86	72	132	116	161	139
Idaho	101	92	99	71	146	111	157	56
Hawaii	106	90	103	117	144	177	151	54
Arkansas	102	76	83	65	112	93	143	87
Kentucky	99	80	86	70	107	94	135	101
Georgia[2]	93	80	79	80	98	105	131	99
D.C.	77	62	48	164	59	204	124	59
Utah	104	111	130	85	138	102	120	77
Florida	72	112	77	77	96	92	120	71
N.Carolina	99	135	132	77	160	92	119	48
New Mexico	104	108	134	88	133	104	118	46
Massach.	122	59	71	118	82	134	114	94
Missouri	101	87	87	76	99	86	113	111
California	90	139	113	111	140	123	112	46
Delaware	107	108	138	96	128	106	111	212[3]
Nevada	86	92	73	91	88	101	111	83
Rhode Isl.	102	80	88	106	89	116	109	145
Indiana	106	88	105	83	99	87	105	131
Pennsylv.	110	65	74	93	75	97	104	198[3]
Texas	91	122	111	80	113	82	102	77
S.Dakota	111	77	88	72	87	73	102	98
Mississippi	95	128	118	66	123	66	101	90
Virginia	101	107	112	85	108	85	100	119
W.Virginia	102	85	95	79	87	79	100	95

	(1)	(2)	(3)	(4)	(5)	(6) A	(6) B	(7)
Maine	119	68	78	92	79	90	98	141
Kansas	99	127	135	95	121	92	97	85
New Jersey	111	63	67	124	68	121	97	144
Arizona	80	159	132	94	122	90	96	86
Alaska	93	96	87	389	86	371	95	109
Connect.	117	54	65	123	60	117	95	115
Louisiana	91	103	100	82	88	78	95	75
Montana	106	108	115	96	110	91	95	76
Oklahoma	92	122	120	85	106	81	95	53
Iowa	117	94	122	97	102	90	93	119
Oregon	93	125	116	95	108	89	93	110
Wyoming	97	120	124	192	107	176	92	59
Washington	96	122	115	101	107	92	91	93
New York	97	83	75	157	70	137	87	113
Illinois	103	99	98	104	88	89	86	77
Ohio	112	87	101	94	82	80	85	138
Maryland	110	101	110	106	92	88	83	123
N.Dakota	111	136	152	98	125	81	83	95
Michigan	114	101	116	119	92	96	80	157
Minnesota	121	106	130	126	102	100	79	111
Wisconsin	120	113	137	118	106	93	79	120
Nebraska	106	108	126	92	90	72	78	83
New Hampsh.	112	64	80	77	56	60	78	252[3]
Colorado	89	134	127	100	82	69	69	140[3]
Vermont	117	81	113	90	54	50	56	297[3]

Notes: (1) Both indices are based on total state appropriations for higher education (column 5) minus appropriations for research, agriculture, and medical facilities. Index A refers simply to dollars per student. Index B refers to dollars per student relative to the state tax revenue per capita.
(2) Georgia data are estimated.
(3) High non-resident tuition paid by a significant proportion of out-of-state students is reflected in these figures. As a result, state appropriation requirements decrease.

Source: Kent Halstead. State Profiles: Financing Public Higher Education, 1985-86. Washington: Research Associates of Washington, 1986. Adapted from tables and text on pp. 30-39.

Section III

Student Aspirations, Access, and Flow

The tables in this section rely heavily on the "High School and Beyond" study (HSB) of the U.S. high school graduating class of 1980, followed up through 1984. While more recent HSB data have been collected (1984 college transcript sample and 1986 survey), they are not--as of this writing--in sufficiently clean condition for inclusion.

Access is one of the major themes of the Anglo-American dialogue, and these tables attempt to isolate some of the most important variables for analysis of the situation in the U.S. Since the the Fall of 1960, enrollment in U.S. institutions of higher education has risen 500%, and the number of Bachelor's degrees conferred has increased 165%. Some 20% of the population over the age of 25 have completed four or more years of college, compared with 7.7% in 1960--a 160% increase. Among minorities, the increase has been 340%. According to the Bureau of the Census (the source for all these figures*), however, the college enrollment rate as a percentage of high school graduates has not changed in 20 years. What that says to us, in part, is that the broad parameters of higher education enrollment are determined by high school graduation rates. These parameters, however, mask considerable differences by race and sex.

In the process of growth, we have learned that access is not a slogan. Aspirations, choice, ability, proximity, cost, aid, student (and parental) perceptions of labor market conditions, and intended career and major (for the college-bound) all play significant roles in the equation.

This presentation offers some previously unexamined data bearing on the role played by student aspirations. The following responses of those who were high school seniors in 1980 may serve as a starting point:

	"How far in school do you think you will get?"		Lowest level educ. to satisfy you
	Feb., 1980	Feb.,1984	Feb., 1980
Less than H.S.	0.4%	0.4%	1.3%
High School Only	19.1	19.1	34.4
Vocational Only	19.6	18.4	14.3
Some Coll.,inc.A.A.	15.3	19.7	21.0
Bachelor's Degree	25.0	24.4	21.4
Master's Degree	11.8	13.4	4.5
Ph.D./Profess. Degree	8.9	4.4	2.8

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*See Digest of Education Statistics, 1987, Table 134 (p.155).

In other words, there is a core of the cohort--about 20%--who do not aspire to any postsecondary education, and an additional 18-19% whose postsecondary aspirations are limited to vocational training (whether in community colleges, proprietary schools, or employer-provided programs). And there is a significant percentage--roughly 15% of the cohort--who attend postsecondary institutions but who would be satisfied with a lower level of education.

Nonetheless, by February, 1984, 66% of the cohort had enrolled in some postsecondary institution. Leaving aside issues such as length of enrollment, full or part-time status, type and number of institutions in which individuals enrolled, etc., and leaving aside the conventional wisdoms about background characteristics most likely to predict enrollment (family SES and income, high school program, academic ability, parental education, etc.), here are some other observations (a few of them counter-intuitive) drawn from data that are not presented in the tables:

- o The language spoken in the home has no influence on enrollment rates. In fact, students from monolingual English households have the lowest rate of enrollment.

- o Family size does not correlate with enrollment rates. In fact, students from families with 5-6 members are more likely to enroll than students from smaller families (though enrollment rates are lowest in families of 10 or more).

- o The more rural the community in which the student's high school was located, the less likely postsecondary attendance of any kind.

- o Approximately 4% of the entire cohort of high school graduates is composed of students from the highest test quartile who did not attend any postsecondary institution within 2 years of high school graduation. Half of this group came from the lowest SES quartile. Within the <u>two</u> top test quartiles, 10% did not attend, and 40% of these were from the lowest SES quartile.* These figures are intended to suggest a target population for recruitment.

- o SES has less of an impact on the application and enrollment rates of Blacks than it does on Whites and Hispanics; but college costs and the availability of financial aid has a greater impact on the enrollment rates of Blacks than on other racial/ethnic groups.

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*Recalculations and aggregations from John A. Gardner. <u>Transition from High School to Postsecondary Education: Analytical Studies</u>. Washington: Center for Education Statistics, 1987. Table 3-4, p.58.

What do the data in the tables indicate and suggest?

- o There has been a noticeable decline in educational aspirations between the high school graduating class of 1972 and that of 1980. Disaggregated by racial/ethnic background, the decline has been most severe among Hispanic men; and its implications are confirmed by long-term educational attainment rates for Hispanic men. Table 7 and 9.

- o Women's educational aspirations at high school graduation have been stable or rising compared to those of men. Table 7.

- o The initial educational aspirations of Blacks are consistently higher than for any other group of high school graduates, but the rate of decline in aspirations is higher for black men than for any other sub-group. Tables 7 and 8.

- o The decline of educational aspirations within the 1980 cohort continues through its postsecondary experience. Unfortunately, we are not yet able to correlate this data with actual long-term persistence. Table 8.

- o But we are now able to present comparisons between initial educational aspirations and long-term educational attainment --for the 1972 cohort. These data demonstrate the potential of the system to recover early disenchantments with post-secondary education. The long-term attainment rate for white women, in particular, is very high. Table 9.

- o The most dramatic trade-off in educational attainment over a long period of time is between the categories of "some college" and "Bachelor's degree." The trade-off holds across all race x sex sub-groups. Table 9.

- o Professional and applied fields (with the exception of Engineering) attract high school graduates of comparatively low ability, academic achievement, and educational aspirations.- Table 10. In the U.S., this is known as an "enrollment mix" analysis, and is very important to many colleges and universities.

Educational Aspirations of High School Seniors, 1972 and 1980
Sex x Race

	(1) H.S. Diploma		(2) Post-Sec Trade School		(3) Some College		(4) Bachelor's Degree		(5) Advanced Degree		(6) Cumulative Bachelor's Degree*	
	1972	1980	1972	1980	1972	1980	1972	1980	1972	1980	1972	1980
All	19.4%	19.2%	18.6%	19.5%	12.7%	15.3%	36.7%	25.2%	12.5%	20.8%	49.2%	46.0%
Males:												
Black	14.7	17.9	19.2	20.1	10.1	12.4	43.4	27.9	12.6	21.8	56.0	49.7
White	15.7	20.7	17.9	20.3	11.7	11.0	38.3	26.4	16.5	21.7	54.8	48.1
Hisp.	14.1	31.8	16.1	19.6	22.9	15.3	34.7	18.2	12.2	15.0	46.9	33.2
Females:												
Black	15.1	13.8	24.2	21.6	9.9	14.2	35.7	24.4	15.2	26.1	50.9	50.5
White	23.5	16.9	18.6	18.3	13.7	19.6	36.0	25.4	8.3	19.9	44.3	45.3
Hisp.	15.8	26.2	27.3	21.9	19.9	19.6	30.5	17.7	6.5	14.5	37.0	32.2

Source: John A. Gardner. Transition from High School to Postsecondary Education: Analytical Studies. Final Report, Contract #OE-300-83-0251. Washington: Center for Education Statistics, 1987. Adapted from Tables 2.1 (p.30), 2.2 (p.32) and 2.3 (p.35).

* Sum of columns (4) and (5). After all, those who earn advanced degrees almost always earn Bachelor's degrees first.

FIGURE 2

THE DECLINE OF EDUCATIONAL ASPIRATIONS

IN THE HIGH SCHOOL GRADUATING CLASS OF 1980

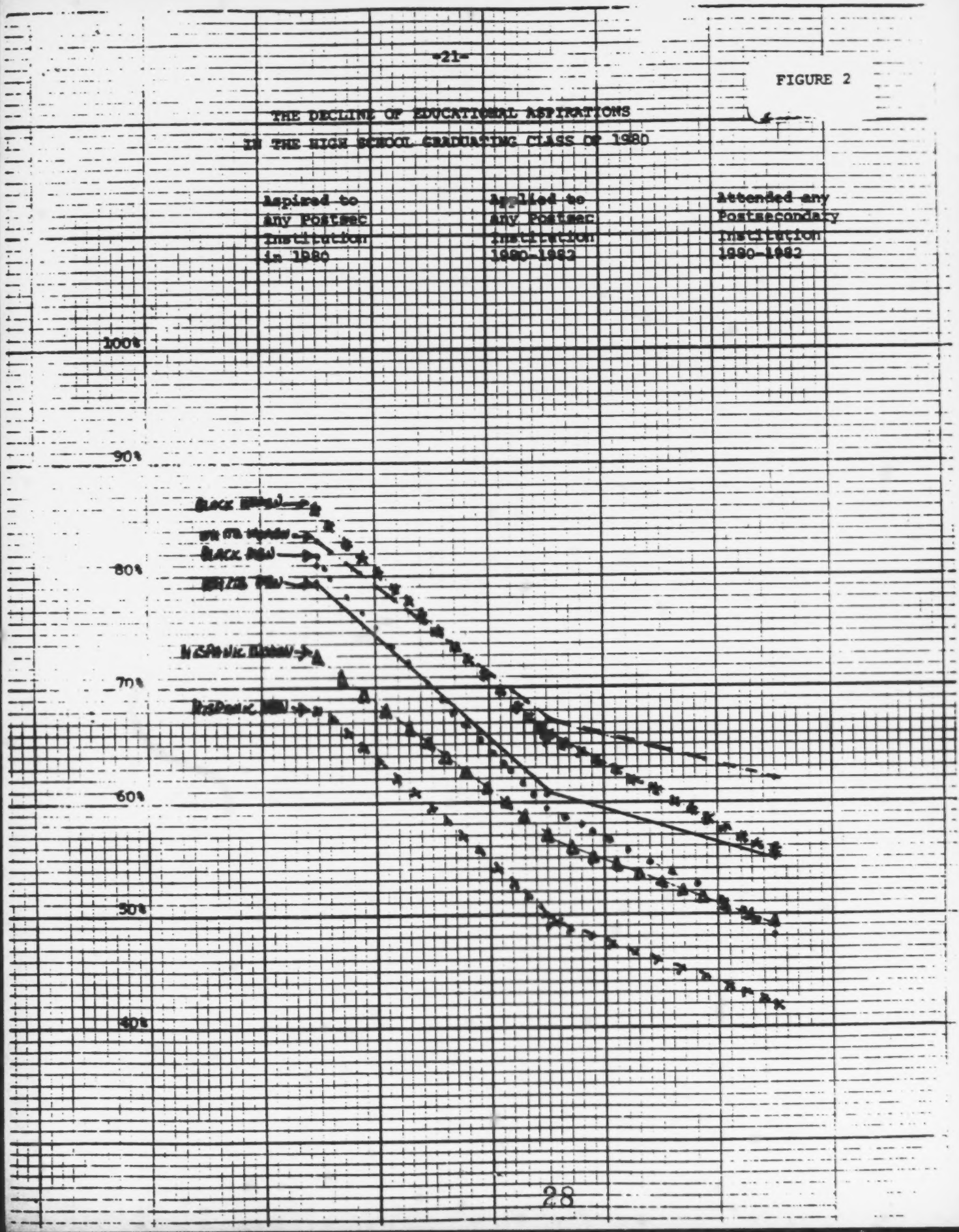


TABLE 8

The Decline of Educational Aspirations in the High School Graduating Class of 1980

	Aspired to Any Postsec Education in 1980	Applied to Any Postsec Institution 1980-1982[1]	Attended Any Postsec Inst. Betwenn 1980 and 1982[1]	In 1982, Indicated That They No Longer Aspired to Level of: (1) Bachelor's Degree[2]	(2) Advanced Degree[2]
All	80.8%	63.6%	57.1%		
Males:					
Black	82.1	59.3	48.1	32.0%	54.7%
White	79.3	61.6	55.6	25.2	43.9
Hispanic	68.2	49.7	42.3	33.8	54.5
Females:					
Black	86.2	66.3	55.6	35.6	54.5
White	83.1	67.3	61.7	23.4	49.0
Hispanic	73.8	57.0	49.2	33.0	62.8
SES Quartile:					
Low		49.8	40.4	32.8	60.2
2nd		58.1	51.5	31.5	55.0
3rd		69.7	64.0	27.0	52.5
High		85.7	80.8	14.4	38.7

Notes:
1. Percentage of total cohort and sub-group.
2. Percentage of those who, as high school seniors, aspired to the level of education indicated.

Source: John A. Gardner. Transition from High School to Postsecondary Education: Analytic Studies. Final Report, Contract #OE-300-83-0251. Washington: Center for Education Statistics, 1987. Adapted from Tables 2.13 (p.51), 3.1 (p.54), and 3.2 (p.56).

Educational Aspirations v. Educational Attainment 14 Years Later: U.S. High School Graduating Class of 1972[1]

	High School Diploma Only		Post-Second. Vocational		Some College[4]		Bach. Degree		Adv. Degree	
	Asp.[2]	Att.[3]	Asp.[2]	Att.[3]	Asp.[2]	Att.[3]	Asp.[2]	Att.[3]	Asp.[2]	Att.[3]
ALL:	19.4%	19.5%	18.6%	14.3%	12.7%	27.9%	36.7%	27.1%	12.5%	11.1%
Male:	N.A.	17.0	N.A.	14.8	N.A.	26.8	N.A.	28.1	N.A.	13.3
Black	14.7	23.4	19.2	19.7	10.1	27.5	43.4	21.0	12.6	8.4
White	15.7	15.5	17.9	14.3	11.7	26.0	38.3	29.8	16.5	14.4
Hispanic	14.1	29.6	16.1	15.1	22.9	35.0	34.7	13.8	12.2	6.4
Female:	N.A.	21.8	N.A.	14.0	N.A.	28.8	N.A.	26.2	N.A.	9.2
Black	15.1	18.5	24.2	20.7	9.9	30.7	35.7	23.9	15.2	6.2
White	23.5	21.8	18.6	12.9	13.7	27.8	36.0	27.3	8.3	10.2
Hispanic	15.8	32.3	27.3	14.7	19.9	38.3	30.5	11.7	6.5	3.0

Notes:

1. The table presents unweighted percentages based on self-reported information for an original (1972 and 1973 supplementary) sample of roughly 23,000, and a 5th Follow-Up (1986) sample of roughly 12,500. The latter data are preliminary, and should be used with caution, particularly as the categories of response changed between the 4th (1979) and 5th (1986) Follow-Up Surveys.
2. Percentage of base-year sample indicating that this was the highest level of education to which they aspired.
3. Percentage of 5th Follow-Up sample indicating that this was the highest level of education they actually achieved by February of 1986. Because of problems in the way in which the question was asked in the 5th Follow-Up, one-third of the cases had to be reconstructed based on responses to the 4th Follow-Up (1979). Hence, these percentages could be slightly understated.
4. Includes Associate's degrees.

Sources: Data on aspirations are drawn from Gardner (1987). Data on attainment are based on unpublished tabulations by Clifford Adelman and Nabeel Alsalam.

Characteristics of SAT Test-Takers by Intended College Major, 1986*

N = 1,000,747

Intended Major	% of N	Mean SAT/Q	(S.D.)	Mean SAT/V	(S.D.)	Mean SAT Comb.	Mean H.S. Class Rank	% Intending Grad.Degree
All		475	121	431	110	906		
Physical Sciences	0.8	598	116	526	115	1124	83%	83
Interdis. Sciences	0.2	589	113	520	110	1109	83	77
Math & Statistics	0.8	593	111	469	113	1062	82	65
Humanities	1.4	506	116	520	115	1026	75	65
Pre-Medical	3.6	539	116	482	107	1021	83	98
Engineering	9.8	553	118	455	111	1008	79	61
History	0.4	492	119	498	117	990	72	63
Foreign Langs.	0.7	496	112	488	114	984	77	61
Life Sciences	3.1	504	121	464	114	968	77	71
Biolog. Sci.		524		480		1004		81
Agriculture		436		404		840		31
Pre-Law	2.8	488	113	467	104	955	75	85
Geology & Envir.	0.8	489	105	458	97	947	71	65
Other Social Sci.	4.2	469	123	453	121	922	71	59
Economics		576		519		1095		81
Internat. Rels.		546		544		1090		82
Polit. Sci.		515		507		1022		76
Sociology		429		414		843		50
Law Enforcement		408		381		789		33
Architecture	1.6	494	110	419	100	913	70	56
Communication	3.8	454	106	451	103	905	70	45
Computer Science	3.7	489	127	413	112	902	72	46
Psychology	3.5	455	106	441	99	896	70	76
Oth./Miss/Undec.	18.5	468	123	424	115	892	68	45
Fine Arts	5.3	442	108	428	106	870	67	37
Business Admin.	20.0	454	111	406	98	860	68	43
Oth. Health Field	7.8	445	109	408	99	853	72	59
Education	4.7	434	104	407	99	841	69	44
Misc. Vocational	2.7	426	110	382	99	808	64	27

Source: Jerilee Grandy, Ten-Year Trends in SAT Scores and Other Characteristics of High School Seniors Taking the SAT and Planning to Study Math, Science, or Engineering. Final Report to the National Science Foundation, March, 1987, miscellaneous tables.

*Ranked by mean SAT combined score.

PSE Entry Rates for 1980 HS Grads

By Feb84

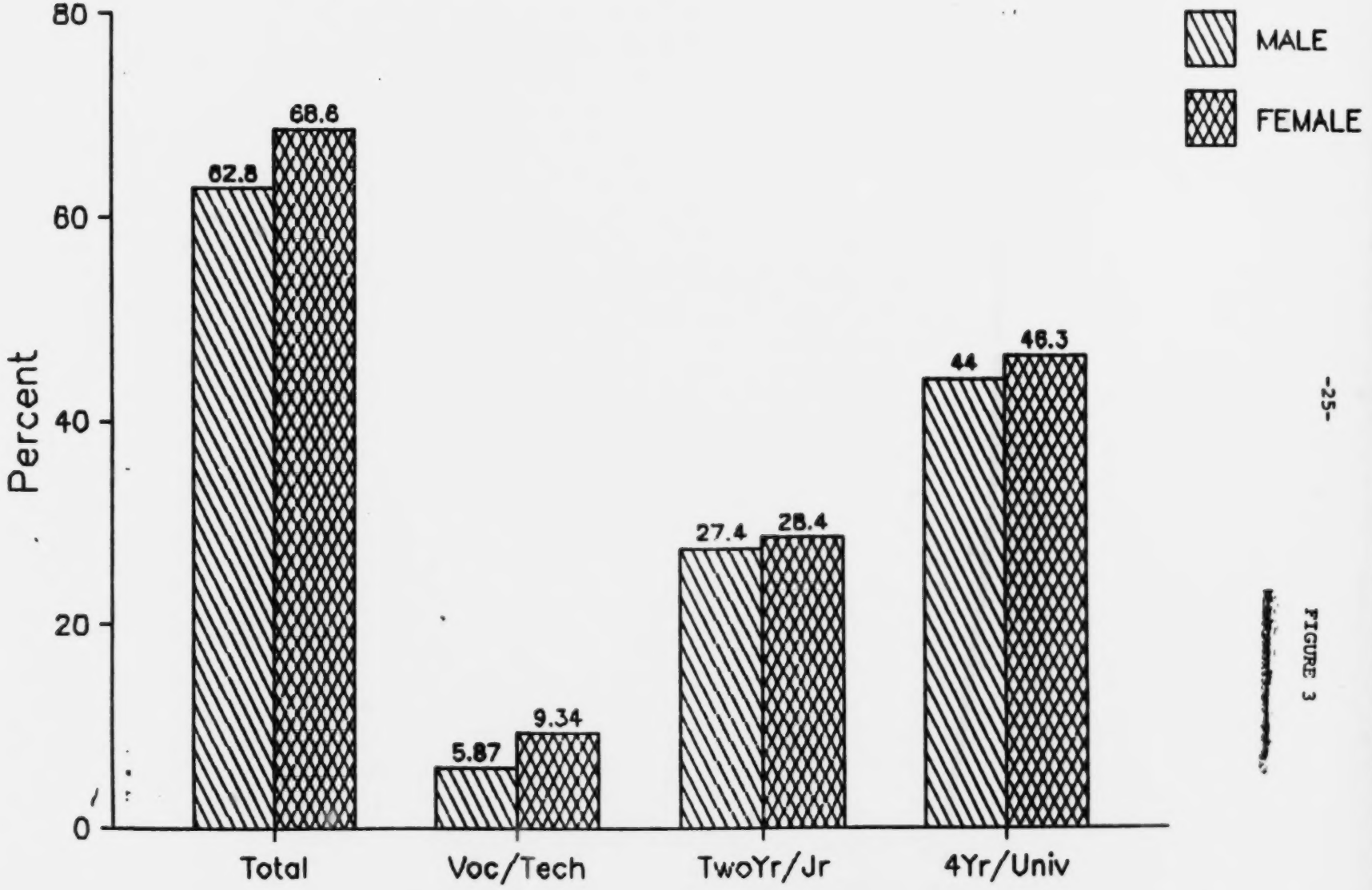


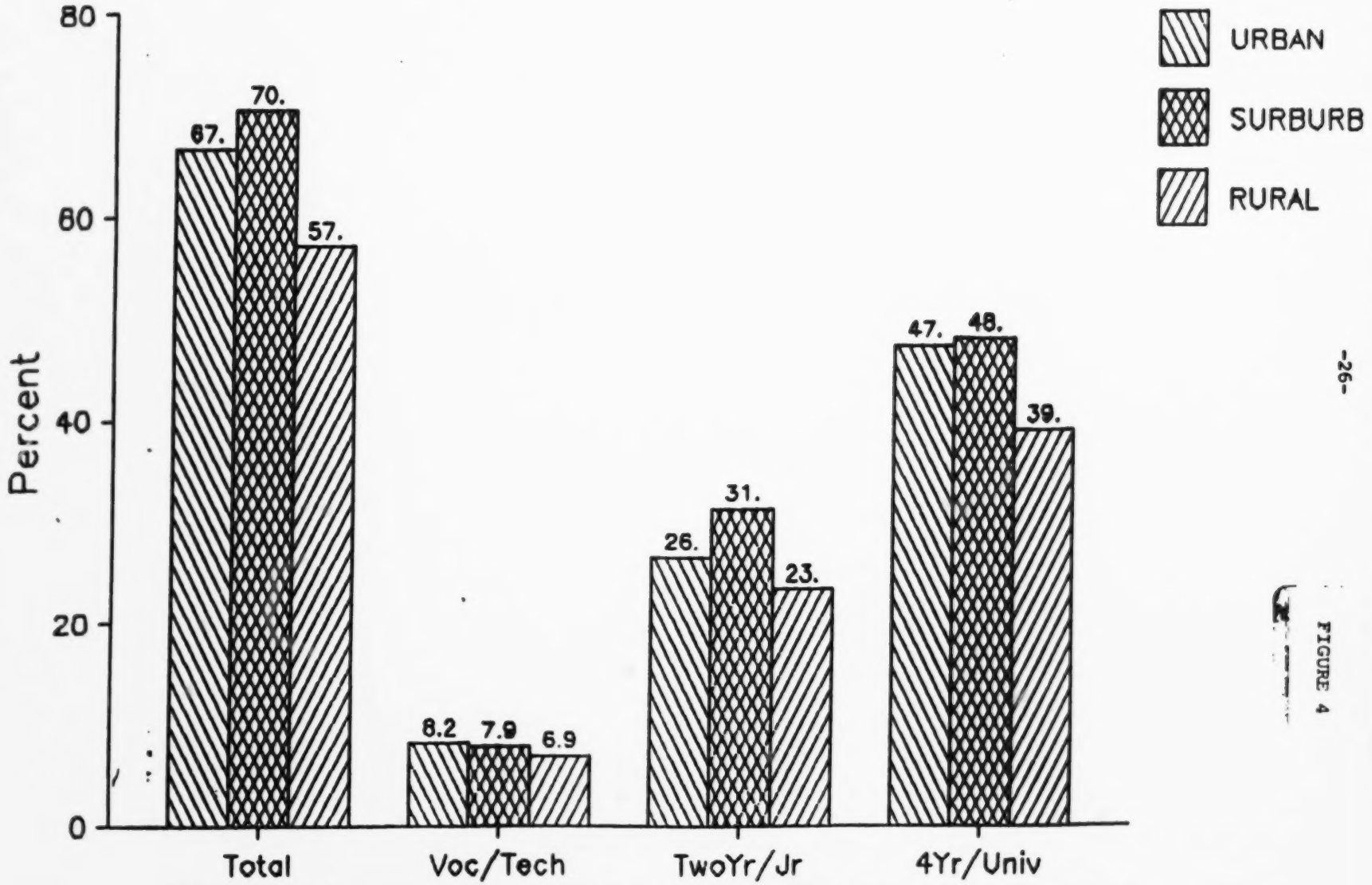
FIGURE 3

Note: Figures for sectors add to more than total due to students enrolling in two or more institutions.

SOURCE: Dennis Carroll, Center for Statistics, U.S.E.D.

PSE Entry by Feb '84 for 1980 HS Grads

HS URBANICITY



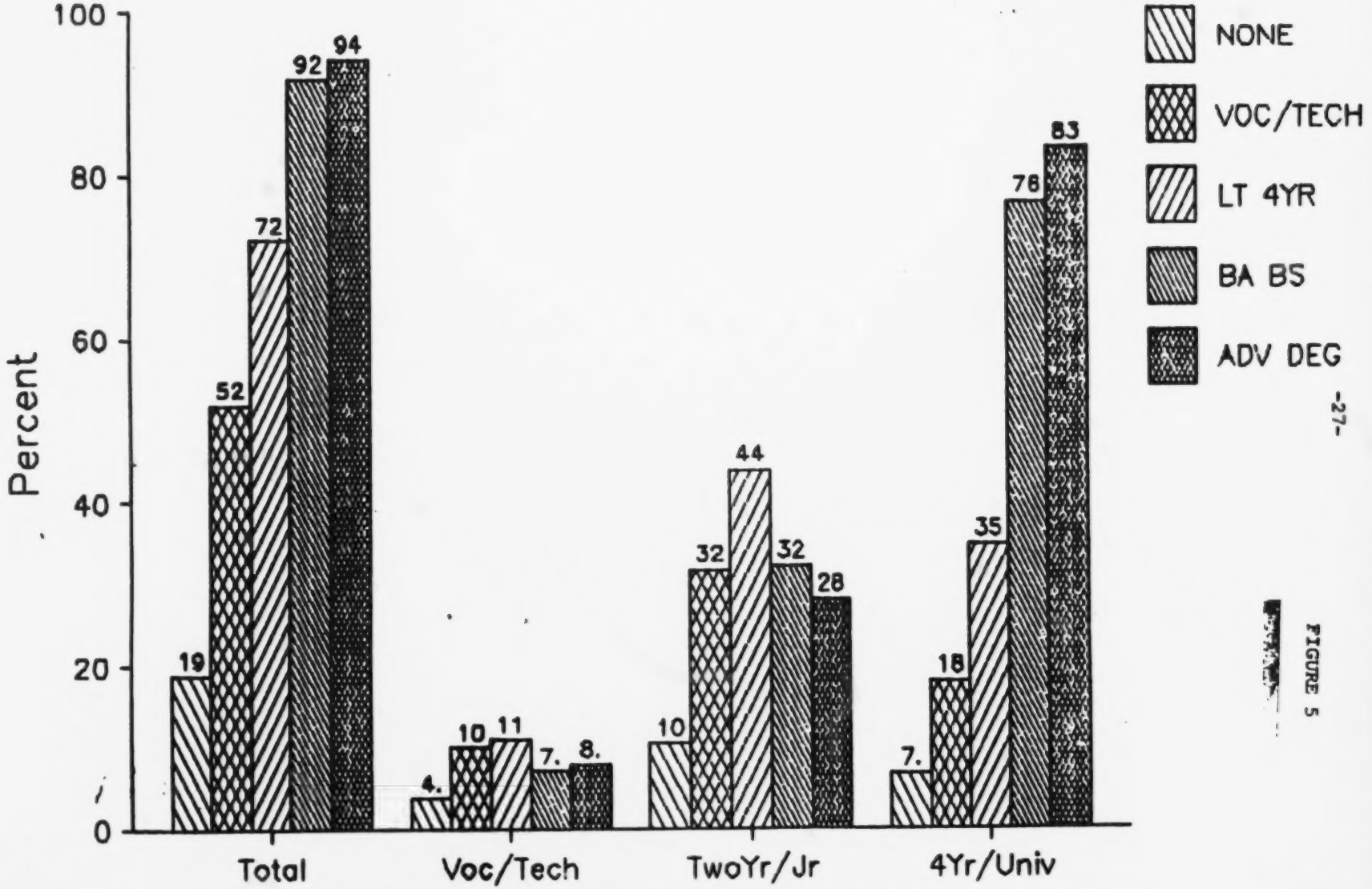
Note: Figures for sectors add to more than total due to students enrolling in two or more institutions.

SOURCE: Dennis Carroll, Center for Statistics, U.S.E.D.

FIGURE 4

PSE Entry by Feb '84 for 1980 HS Grads

PSE PLANS



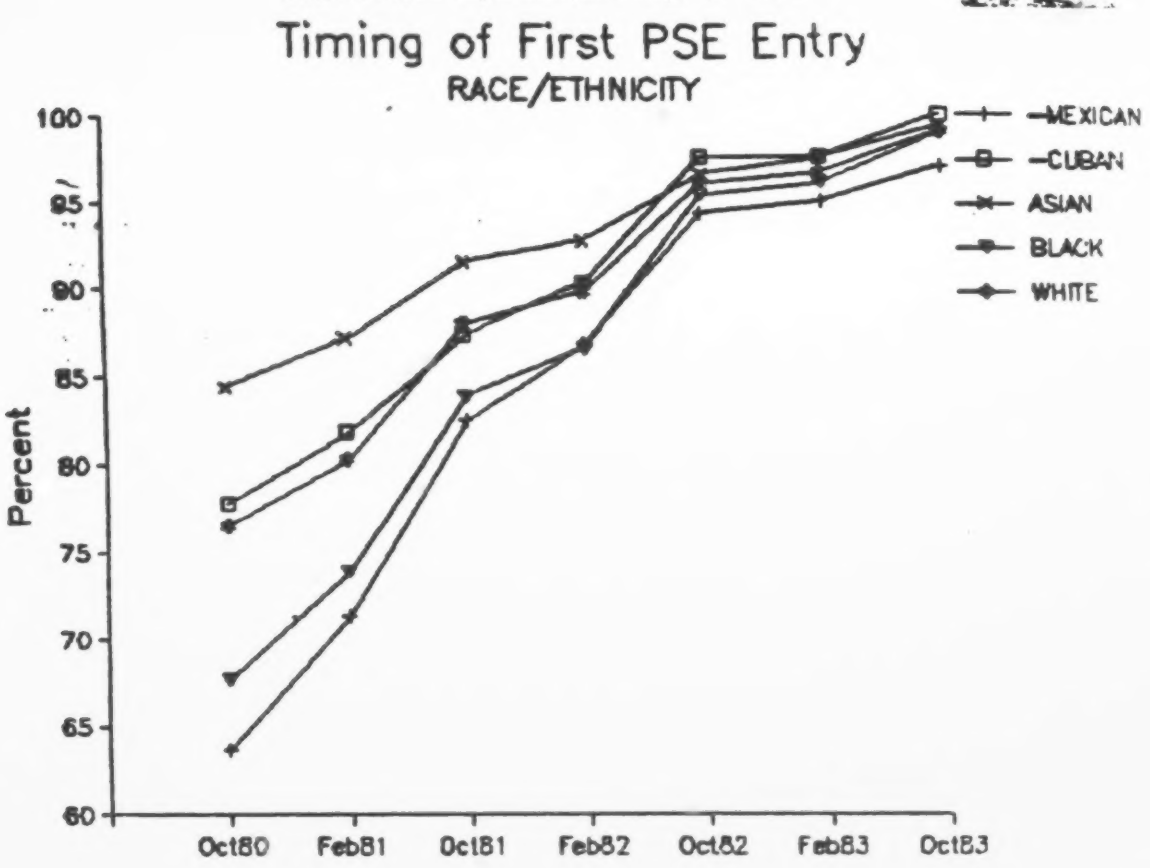
Note: Figures for sectors add to more than total due to students enrolling in two or more institutions.

SOURCE: Dennis Carroll, Center for Statistics, U.S.E.D.

FIGURE 5

FIGURE 6

HIGH SCHOOL GRADUATING CLASS OF 1980



SOURCE: Dennis Carroll, Center for Statistics, U.S.E.D.

SECTION IV

Student Outcomes: Attainment and Achievement

Traditional measures of student academic outcomes in the U.S. have focused on evidence of attainment, i.e. the level of education at which a student exited from the system, with or without credentials. But as credentials are the most accessible evidence, we tend to examine degrees conferred or other indicators such as licenses and certifications in fields in which they are applicable. In traditional higher education, too, we tend to be interested in the distribution of degrees by level and field, and in the amount of time it takes students to earn degrees.

More recently, U.S. educators and policy-makers have displayed the same type of interest in measuring the academic achievement of college graduates as they have historically displayed concerning high school graduates. The only national data sets available to address this interest are those of scores on standardized tests taken by applicants to graduate and professional schools. Even though the latest (5th Follow-Up) National Longitudinal Study data indicate that approximately 45% of a given cohort of college graduates will eventually take one or more of these tests, critics have claimed that the test-taking population is "unrepresentative," and hence that the results should be not used to judge the quality of American higher education.

But if the 1986 NLS data are generalizable, and if one removes non-resident aliens from the test-taking population (as Table 14 does), then the argument concerning unrepresentativeness is specious. Furthermore, as I have elsewhere contended (Adelman, 1985), the only background characteristic of test-takers that seems to make a difference in performance on tests of "general learned abilities" such as the Law School Admissions Test (LSAT) or Graduate Management Admissions Test (GMAT) is undergraduate major.

Even so, one should not use these data to judge the overall quality of the system, principally because the tests themselves are limited measures. Content coverage is not always generalizable and the difficulty level of the questions is designed for students with higher educational aspirations than their peers.

The tables in this section present two types of data: academic attainment and achievement. Within the next year or two, and using both the NLS 5th Follow-Up and the NLS Postsecondary Transcript Sample, researchers will be able to tell us far more about the long-term impacts (in terms of employment, career advancement, civic participation, etc.) of the various patterns of postsecondary attendance and courses of study. During the same period, we will also see the results of a current study of the relationship between undergraduate course-taking patterns and

near-term measures of academic achievement. Both these undertakings require detailed analyses of college transcripts, a very difficult and time-consuming task given both the diversity of institutions and programs in the U.S., and the frequent practice of transferring credits from one institution to another.

As Table 11 suggests, transcript analysis will be very critical to the overall assessment of participation and completion rates in U.S. higher education. It appears that the self-reported information on which we have previously relied is somewhat inflated.

TABLE 11

Educational Attainment, High School Class of 1972
(percentages are unweighted)

	Self-Reported 1979	Transcript Data, 1984	Self-Reported 1986
Number in Survey	20,862	Not Applicable	14,489
Number Completing Survey Form	18,630	14,759[1]	12,841
No Postsec. Ed.	22.1%	----[2]	19.7%
Vocational Postsec. Only	11.0%	----[2]	14.3%
Some College, 2 or 4 year	32.6%	----[2]	27.8%
Bachelor's Degree	31.0%	30.0%[3]	27.1%
Advanced Degree	3.4%	6.4%[3]	11.1%
Cumulative Bachelor's Degree[4]	34.4%	35.1%[5]	38.2%

Notes:

1. Number of those in original sample who claimed any postsecondary education in any follow-up survey through 1979.

2. Transcripts are still being analyzed; percentage cannot be determined. It appears, however, that roughly 6% of those who claimed postsecondary attendance did not, in fact, attend.

3. Percentage is of the universe of those who claimed to have attended postsecondary institutions. The percentage of the entire cohort would be smaller.

4. Combination of Bachelor's Degree and Advanced Degree categories, under the assumption that Advanced Degree recipients already hold the Bachelor's.

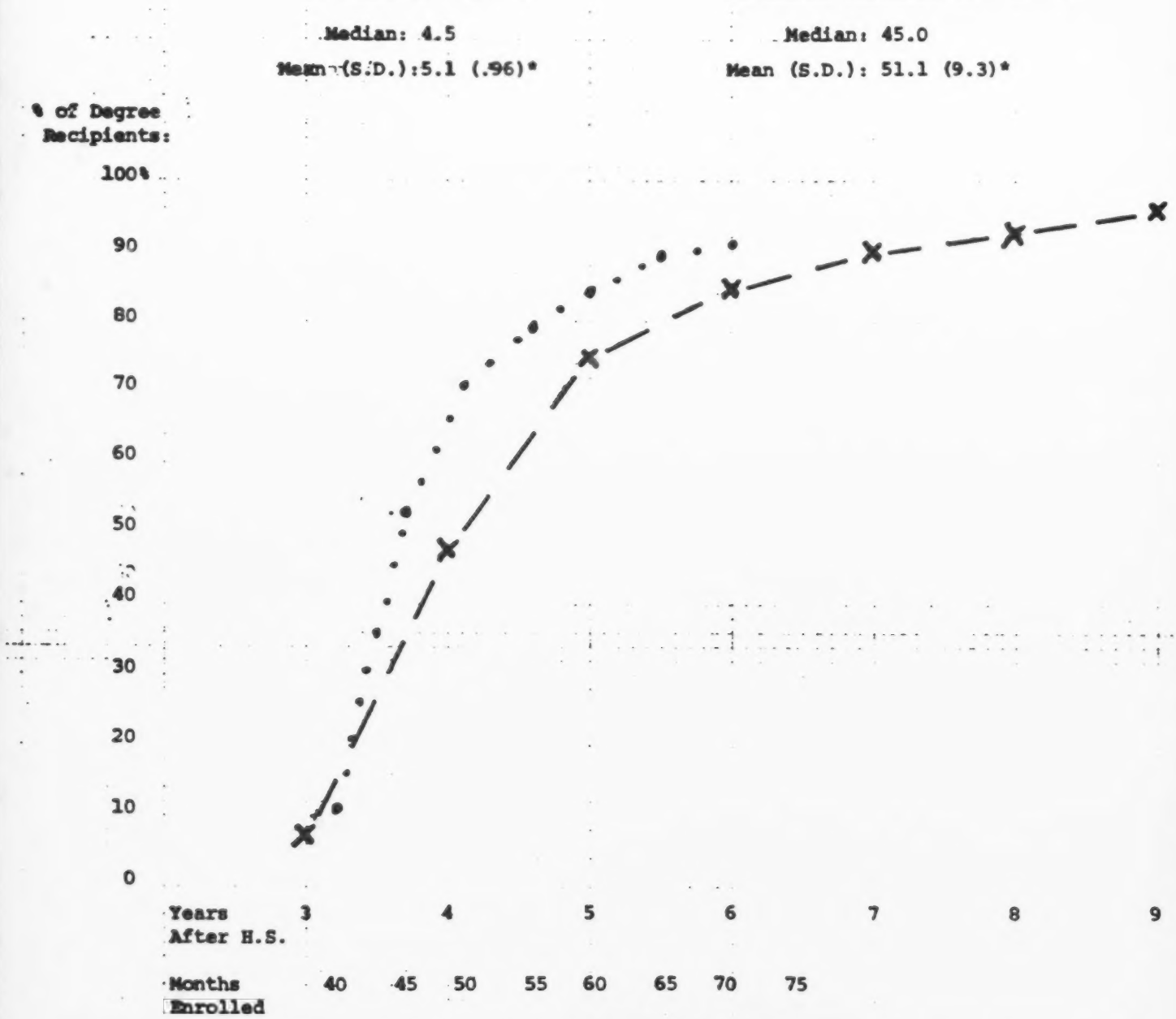
5. Percentage of the universe of those for whom viable postsecondary transcripts were actually received (12,630).

Sources: Codebooks for the National Longitudinal Study and NLS Postsecondary Transcript Sample (Washington: Center for Education Statistics, 1980, 1986, and 1987), and unpublished tabulations.

FIGURE 7

TIME TO DEGREE FOR BACHELOR'S DEGREE RECIPIENTS OF THE HIGH SCHOOL GRADUATING CLASS OF 1972

(N=4440)

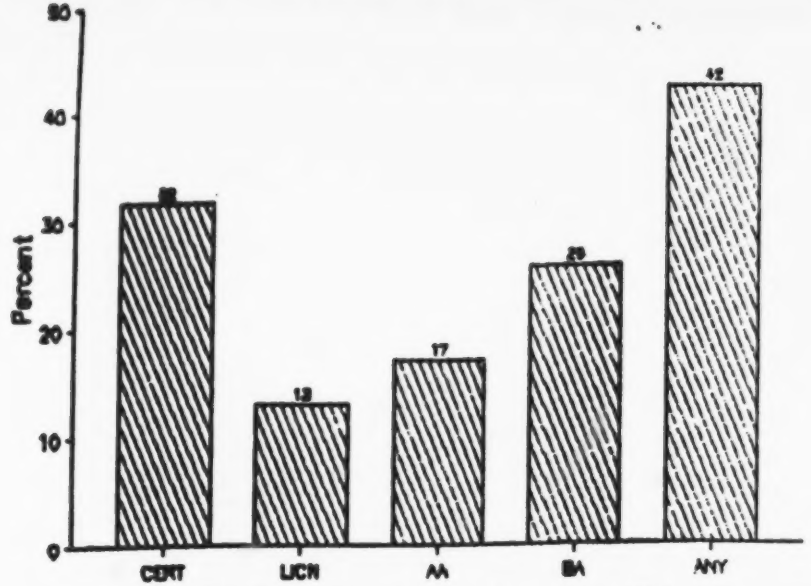


*Mean and S.D. are estimated. They are very difficult to compute given the current configuration of the data. Use with caution.

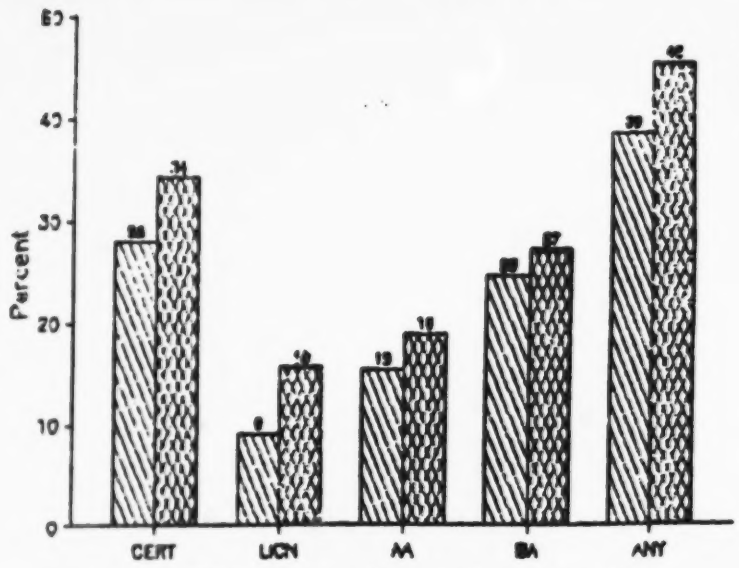
SOURCE: Postsecondary Education Transcript Study (PETS). Preliminary tabulations from the NLS (1972) cohort by Jeffrey A. Owings, Center for Statistics, U.S.E.D.

PSE COMPLETION RATES FOR THE HIGH SCHOOL GRADUATING CLASS OF 1980

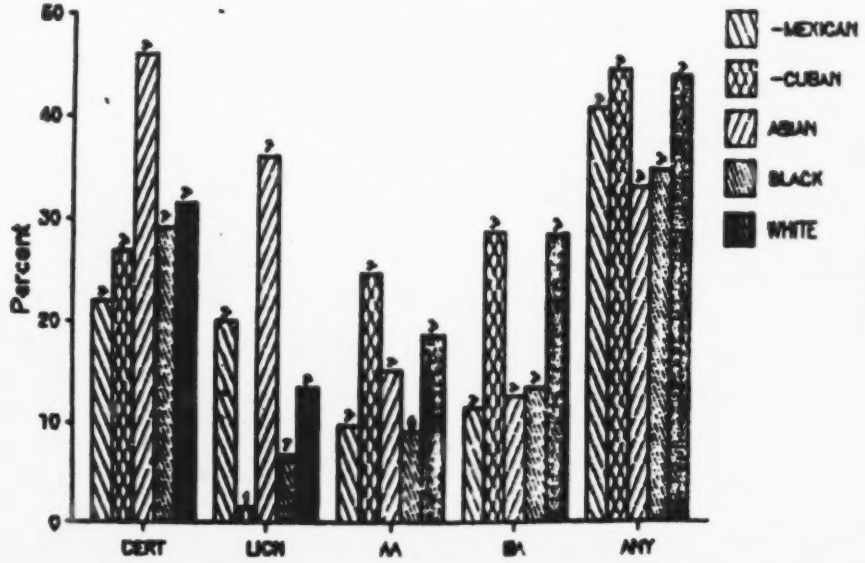
PSE Completion by Feb '84



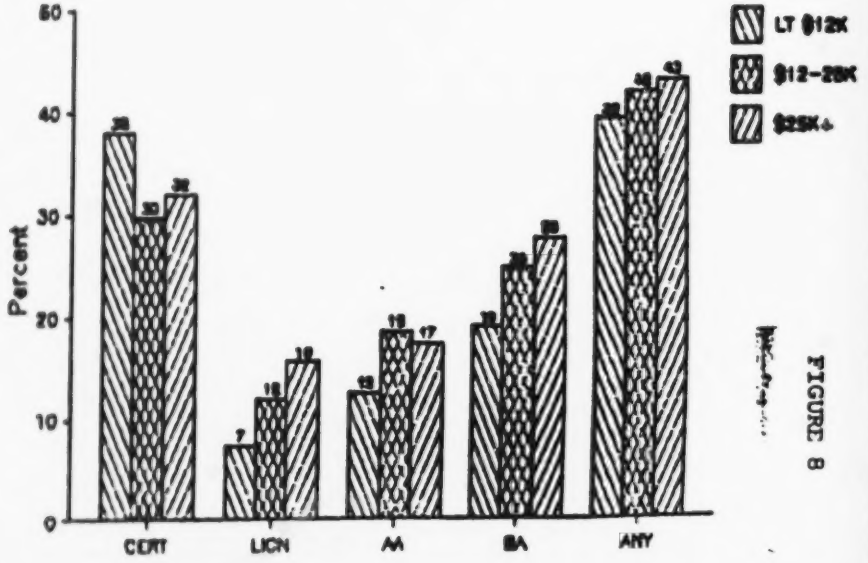
PSE Completion by Feb '84
SEX



PSE Completion by Aug '84
RACE/ETHNICITY



PSE Completion by Aug '84
FAMILY INCOME



-33-

FIGURE 8

SOURCE: Dennis Carroll, Center for Statistics, U.S.E.D.

TABLE 12

Bachelor's Degrees Conferred

	1975	1980	1985
Total Number (000)	922.9	929.4	979.5
I. Professional: Social Science Based	32.5%	32.6%	32.8%
Business Admin., etc.	14.4	19.9	23.8
Education	18.1	12.7	9.0
II.Professional: Science Based	5.2%	7.3%	8.9%
Architecture/Env. Des.	0.9	1.0	1.0
Engineering	4.3	6.3	7.9
III.Applied Fields: Social Science Based	7.0%	9.1%	8.9%
Communications	2.0	2.9	4.1
Home Economics	1.8	2.0	1.6
Recreation	0.5	0.6	0.5
Protective Services	1.1	1.6	1.3
Public Affairs	1.6	2.0	1.4
IV. Applied Fields: Science Based	8.1%	10.3%	10.5%
Agriculture/Nat.Resources	1.9	2.3	1.8
Communications Technologies	0.1	0.2	0.2
Engineering Technologies	0.8	1.1	1.9
Health Sciences	5.3	6.8	6.6
V. Arts and Sciences	46.6%	39.8%	38.5%
Computer Science	0.5%	1.2%	4.0%
Foreign Languages	1.9	1.2	1.0
Letters	5.3	3.6	3.5
Liberal Studies	1.4	2.2	2.0
Life Sciences	5.6	5.0	3.9
Mathematics	2.0	1.2	1.5
Interdisc. Studies	1.6	1.5	1.6
Philos./Religion/Theology	1.5	1.4	1.3
Physical Science	2.3	2.5	2.4
Psychology	5.5	4.5	4.1
Social Sciences	14.6	11.1	9.3
Vis.& Perf. Arts	4.4	4.4	3.9
VI. All Other	0.6%	0.8%	0.4%

Source: Digest of Education Statistics, 1987, reconfiguration of Table 154 (p.190)

TABLE 13

Standardized Test Scores of College Graduates, 1964-1985

The following represent changes in performance (expressed in Standard Deviation Units) on tests taken by college graduates for admission to graduate and professional schools. Non-resident aliens are included. Adelman (1985) estimated that 25-30% of college graduates in any one year take one or more of these examinations. Preliminary analysis of data from the 1986 survey of the National Longitudinal Study (High School graduating class of 1972) indicates that 45.8% of college graduates took one or more of these (and other similar) tests within 14 years of graduating from high school. The latter figure is in keeping with other NLS data on graduate and professional school enrollments in the cohort at issue.

I. Tests of General Learned Abilities

Test	Score Scale Max.	Score Scale Min.	Approx. Number of Questions	Mean Score Change in S.D. Units	Period	# Examinees Most Recent Year
GMAT (Business)	800	200	150	-.16	1965-1982	200,631
LSAT (Law)[1]	800	200	115	+.04	1968-1974	
	800	200	115	+.21	1975-1982	99,928
MCAT (Medicine)	15	1	325[2]		1977-1982	47,597
Reading			60	-.09		
Quantit.			60	-.21		
GRE (Gen.Grad.)					1964-1985	271,972
Verbal	850[3]	210[3]	----[4]	-.44		
Quantit.	845[3]	200[3]	----[4]	+.09		

II. Graduate Record Examination Subject Area Tests

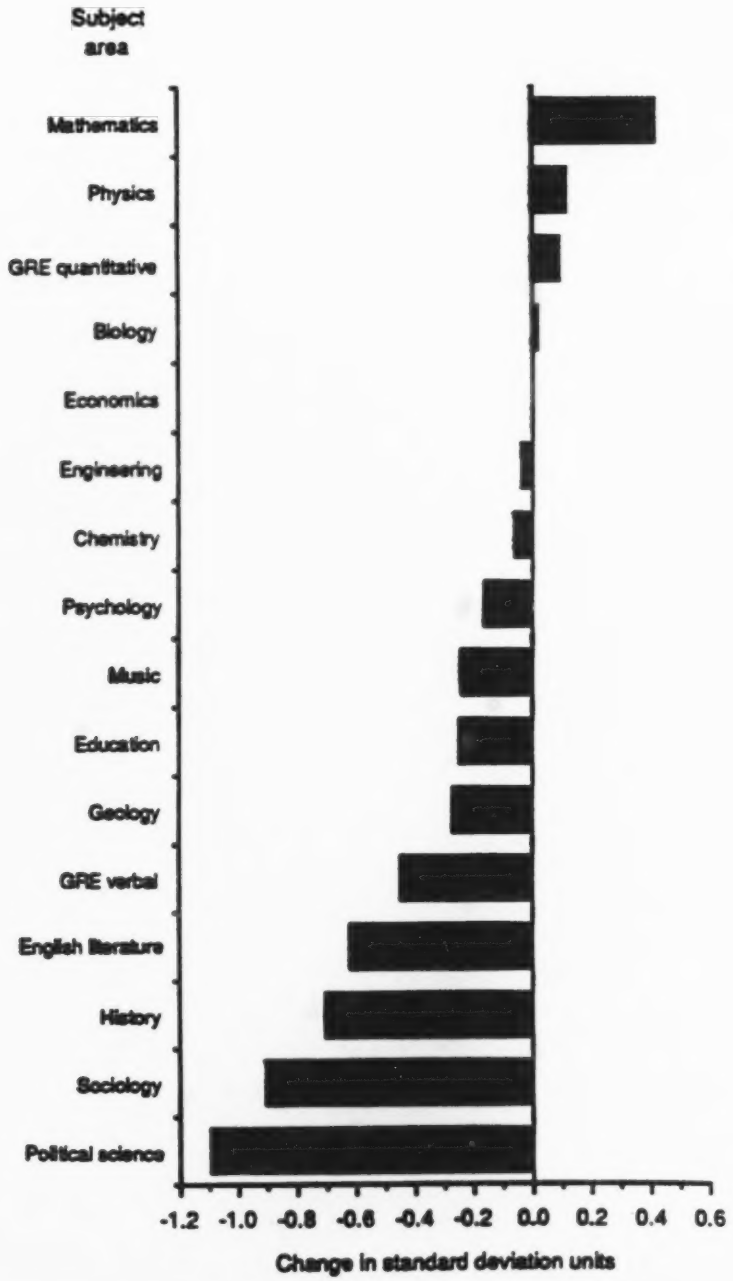
Computer Sci.	N.A.	N.A.	N.A.	-.17	1976-1985	5,464
Biology	990	260	210	+.02	1964-1985	12,647
Chemistry	990	440	150	-.06	1964-1985	4,806
Physics	990	370	100	+.12	1964-1985	3,863
Geology	910	300	200	-.27	1967-1985	2,978
Mathematics	990	420	66	+.42	1964-1985	4,096
Engineering	990	320	150	-.03	1964-1985	8,620
Economics	990	400	160	.00	1964-1985	3,150
Polit. Science	850	250	170	-1.08	1964-1985	2,105
Psychology	940	270	200	-.16	1964-1985	14,040
Sociology	990	210	200	-.90	1964-1985	1,154
Education	810	220	200	-.24	1964-1985	3,985
History	870	330	190	-.70	1964-1985	2,238
English Lit.	810	250	230	-.62	1964-1985	5,330
French	810	290	190	-.65	1964-1979	1,028
Music	820	270	200	-.23	1966-1985	1,773

1. LSAT data are in two periods corresponding to different data sets.
2. There are 6 sections of the MCAT (we use only two in this chart).
3. Average of 7 forms of the GRE General Exam used between 1973-1977.
4. Number changed in 1976 with introduction of GRE/Analytic section.

Sources: Clifford Adelman. The Standardized Test Scores of College Graduates, 1964-1982. Washington: National Institute of Education, 1985, and unpublished tabulations of ETS data through 1985.

FIGURE 9

Changes in performance on Graduate Record Examinations (GRE) between 1964 and 1985



SOURCE: Clifford Adelman, The Standardized Test Scores of College Graduates, 1964-1982, 1985, and unpublished tabulations.

TABLE 14

Performance on Tests of General Learned Abilities Taken by Applicants to Graduate and Professional Schools in 1981-1982, by Undergraduate Major, U.S. Citizens Only[1]

Test:	LSAT (Law)	GMAT (Bus)	GRE/Verb.	GRE/Quant.	TOT. N	
Total N	99,928	203,304	256,381[1]		558,613	
Subj. Universe	99,928	139,964	180,798[1]		420,690	
Respondents2	85,198	138,946	174,624		398,768	
% Resp./Univ.	85.3%	99.3%	99.6%		94.8%	
Mean Score/Univ.	553	482	482	525		
Stand.Dev./Univ.	110	97	123	134		
	% by which the Mean for the Major is Above (Below) the Mean for the Universe					% of Respond
Major:					353,680	88.8%
English	5.6%	4.1%	14.5%	(5.7%)	17,757	4.4%
Philosophy	8.7	11.0	17.6	4.6	3,410	0.9
Arts/Music	(0.5)	(1.2)	1.7	(8.4)	9,670	2.4
Foreign Langs.	5.7	3.3	7.9	(4.2)	7,068	1.8
Other Human.	4.7	1.8	7.3	(5.0)	8,341	2.1
History	2.9	4.6	10.8	(5.5)	15,123	3.8
Economics	9.6	7.3	0.8	12.4	17,562	4.4
Government	3.3	4.6				
Polit. Science	(1.6)	0.6	3.5	(5.0)	27,337	6.9
Psychology	0.9	0.8	3.1	(4.0)	24,885	6.2
Sociology	(7.0)	(5.0)	(5.0)	(15.0)	8,693	2.2
Anthropology	4.0	-----[3]	16.4	(1.7)	1,863	0.5
Other Soc. Sci.	(0.9)	0.3	(0.4)	(7.2)	20,048	5.0
Biol./Biosci.	4.0	3.3	5.4	8.0	22,820	5.7
Chemistry	7.6	7.5	2.1	18.3	6,867	1.7
Mathematics	12.8	13.3	2.7	26.3	6,564	1.6
Physics	----[4]	----[4]	6.6	29.5	3,183	0.8
Other Science	2.8	0.8	3.5	14.5	9,154	2.3
Computer Sci.	-----[3]	5.4	(1.5)	22.9	5,035	1.3
Engineering	8.0	10.0	(7.3)	25.1	29,718	7.5
Accounting	3.4	(1.5)				
Finance	3.4	(0.8)				
Marketing	----[3]	(8.1)				
Business Admin.	(4.5)	----[3]	(9.1)	(2.3)	77,679	19.5
Manag./Ind.Man.	(5.4)	(7.7)				
Other Business	(0.9)	(5.0)				
Education	(8.7)	(4.2)	(10.4)	(15.8)	22,978	5.8
Journalism	0.7	----[3]	5.7	(8.6)	2,767	0.7
Social Work	(10.1)	----[3]	(9.1)	(20.8)	2,999	0.8
Speech	(2.7)	----[3]	(6.0)	(14.3)	2,159	0.5

1. GRE data are for all first-time test-takers, and hence include non-resider aliens. Scores for U.S. citizens would be slightly higher on the GRE/V ar slightly lower on the GRE/Q.
2. The number of individual in the subject universe who identified their major.
3. Test data not reported separately for the major field indicated.
4. Less than 0.5% of subject universe, hence data excluded.

Source: Clifford Adelman. The Standardized Test Scores of College Graduates, 1964-1982. Washington: National Institute of Education, 1985, p. 45.

TABLE 15

Graduate and Professional Degrees Conferred

	1975	1980	1985	Non-Res. Alien %
TOTAL	382,449	400,827	394,257	
I. Professional Degrees	(67.7%)	(69.9%)	(69.5%)	
1. 2nd and 3rd Prof., e.g. L.L.M., D.Arch., DPA, Ed.D., and analogous	13,773	13,814	14,861	20.6%
2. 1st Profess., 3+ years e.g. M.D., J.D., M.Div.	55,916	70,131	75,063	
3. 1st Profess., 2+ years e.g. MBA, M.Arch., M.E.	54,312	74,049	91,728	
4. 1st Profess., 1+ years e.g. M.Ed., MSW, MPA	134,779	122,364	92,182	
II. Applied Field Degrees[1]	(7.6%)	(8.6%)	(9.0%)	
1. Doctoral	1,395	1,493	1,888	24.8%
2. Master's	27,572	32,981	33,666	
III. Arts and Sciences Degrees	(24.7%)	(21.5%)	(21.5%)	
1. Doctoral:				
Science & Math	8,198	7,689	7,784	18.6%
Social Sciences	6,651	5,987	5,759	12.3%
Humanities[2]	4,392	3,893	3,421	8.1%
Arts: Vis.& Perf.	649	655	693	
Other	270	401	338	
2. Master's:				
Science & Math	18,983	18,236	20,838	
Social Sciences	23,958	19,907	18,788	
Humanities[2]	19,671	15,021	14,051	
Arts: Vis.& Perf.	8,362	8,708	8,714	
Other	3,568	4,998	4,483	

Notes: (1) Includes Agriculture, Communications and Communic. Technologies, Engineering Technologies, Home Economics, Library Sci., Recreation, Protective Services, and (on the Master's level) Health Sciences. Some professional fields, e.g. Journalism, cannot be disaggregated from these data.
(2) Includes category of "Theology," which may cover some professional degrees, though it is hard to determine.

Sources: Digest of Education Statistics, 1987, recalculations from Tables 150, 152, 155, 156, and 157. Doctoral Recipients from U.S. Universities: Summary Report, 1985 (Washington: Nat. Academy Press, 1986), Table 1A, pp. 42-45.

SECTION V

Faculty

National data on U.S. faculty are disappointing. With the exception of the Carnegie Foundation surveys, we have not gathered the type of comprehensive information on faculty that we regularly gather on students. The National Science Foundation examines faculty in a limited set of disciplines in depth, but it is difficult to generalize the science and engineering "pipeline" to academic career paths in general. Other organizations that conduct surveys of faculty confine their interests to very specific topics, such as salaries or collective bargaining. It is difficult to piece together a national portrait from such fragmented efforts. The Center for Education Statistics is about to launch a major national survey, but it is the first in over a decade.

The data presented in the five tables in this section are basic to an understanding of the the present and future of the core academic workforce, its comparative interests and activities in teaching and research, and changes in its attitudes over the past decade. Excluded from the universe are the approximately 150,000 teaching assistants and occasional faculty members.

What do the data indicate and suggest?:

- Most of the growth in the faculty workforce since 1970 has been in the part-time category and in 2-year institutions (the two trends fit together).

- The percentage of faculty with tenure has been stable in recent years, though there is still a disparity in tenure rates between men (71%) and women (52%).

- Despite recent improvements, faculty salaries still have not kept pace with inflation (but considerable disparities by discipline and institutional type are masked by a national average).

- Research has assumed a much larger role in the careers of faculty in most types of 4-year institutions than was the case a decade ago, resulting in an increasing "distance" between faculty and students.

Between 1995 and 2005, the largest current cohort of U.S. faculty will be retiring. They will do so at precisely the moment of upturn in the traditional college-going-age (18-24) population. Will enough of our current students head into academic careers to replace them? It is doubtful. The Cooperative Institutional Research Project's annual surveys of entering full-time college freshmen indicate that, in 1986, only 0.3% (or approximately 5,000) currently intend to become professors. Twenty years ago,

the figure was 1.8% (or approximately 24,000).

As for the quality of future faculty, the only extant data that provide defensible road-signs are those concerning career selection among college graduates in the top 15% of their classes. The opinions of graduate deans and department chairs concerning the quality of their graduate students, while frequently cited in this regard, are not as convincing as the actual careers of Phi Beta Kappa members, particular as the percentage of graduate students who follow faculty careers differs widely by field. Unfortunately, the data demonstrate that since 1969, there has been a dramatic shift in the career choices of the "best-and-brightest" U.S. college graduates from academic to professional, and specifically from college teaching to law.

Basic Data on American Faculty[1]

Year	TOTAL (000)	Part Time	in Public Institns.	in 4 Yr. Institns.	FT Total (000)	Women	Minority	Tenure	Senior	Ave. Sal. Const. $
1985	710	35.8%	70.3%	70.4%	471[2]	27.0%[2]	9.6%[2]	66.0%	51.0%[1]	$32.4
1980	686	34.4%	72.2%	76.1%	450	25.9%	N.A.	64.8%	50.6%	$30.0
1975	628	30.0%	70.5%	74.4%	440	24.6%3	8.1%[3]	56.4%	50.7%[4]	$32.6
1970	474	21.9%	66.2%	80.6%	369	N.A.	N.A.	N.A.	N.A.	$35.2[4]

Sources: (1) Digest of Education Statistics, 1987, Tables 137, 138, 139 (pp. 158-9).
(2) Digest of Education Statistics, 1982, Table 98, p.107.
(3) Condition of Education, 1978 (Washington: Nat. Center for Educ. Statistics, 1979), Table 4.12 (p.188), Table 4.15 (p. 194).

Notes: 1. Exclusive of junior instructional staff
2. 1983 data
3. 1976 data
4. 1973 data

TABLE 17

Faculty Work, 1984: Undergraduate Instruction v. Research
(percentage of respondants)

Instit. Type:	All 4-Year	Research Univers.	Doctoral Instits.	Compreh. Colls.	Lib.Arts Colls.
Hours per Week:					
NONE					
Instruction	14%	26%	14%	8%	3%
Research	17	8	11	23	33
1 - 4					
Instruction	21	35	24	13	13
Research	25	13	27	32	36
5 - 10					
Instruction	38	30	41	41	43
Research	26	24	29	27	19
11 - 20					
Instruction	25	8	19	36	38
Research	17	26	18	12	10
More than 20					
Instruction	2	1	2	2	3
Research	15	29	15	6	2
Research Activities					
Never Published/Edited Book or Monograph		48%	51%	59%	67%
Never Published in Profess. Journal		11	18	29	38
Not Now Engaged in Research for Publication		12	20	37	49
Faculty Attitudes					
Interested more in Teaching than Research		39%	63%	75%	85%
Teaching should be Primary Criterion for Promotion		34	53	72	83
Tenure Difficult without Publication in Department		92	85	54	35

SOURCE: Carnegie Foundation for the Advancement of Teaching, National Survey of Faculty, 1984, as cited in Ernest L. Boyer, College (New York: Harper & Row, 1987), Tables 18 (p.121), 19 (p.128), 20 (p.129) and 21 (p.130).

TABLE 18

Faculty Attitudes and Student Perceptions, 1976 and 1984

	All 4-Yr. Insts. Percent Agreeing	
	1976	1984
Faculty Attitudes		
My interests lie toward teaching as opposed to research	70%	63%
Teaching effectiveness, not publication should be the primary criterion for promotion	70	58
In my department it is very difficult to achieve tenure without publishing	54	69
Student ability is "fair or poor"	46	54
Standards for admissions should be "higher"	48	64
Standards for degrees should be "higher"	53	57
Student Perceptions		
Professors take special interests in my academic progress	63%	59%
Professors have had a great influence on my academic career	46	44
There are professors to whom I feel free to turn for advice on personal matters	53	39
Most students are treated impersonally at my college	45	48

SOURCE: Carnegie Foundation for the Advancement of Teaching, National Surveys of Faculty and Undergraduates, 1976 and 1984, as cited in Ernest L. Boyer, College (New York: Harper & Row, 1987), Tables 8 (p.55), 10 (p.75) and 21 (p.130).

TABLE 19

Decline of Interest in Faculty or Research Careers Among Entering Freshmen in Four-Year Colleges, 1974-1983

	College Professor			Researcher		
	1974	1979	1983	1974	1979	1983
Intended Major:						
Arts & Humanities	2.7%	1.0%	1.4%	0.1%	0.1%	0.1%
Social Sciences	0.8	0.4	0.5	0.8	0.4	0.6
Biological Sciences	0.4	0.2	0.3	15.5	21.6	17.3
Physical Sci./Math	2.2	1.2	1.6	26.3	22.5	20.0
Computer Science	0.2	0.1	0.1	1.3	0.2	0.3
Engineering	0.1	0.0	0.1	1.3	0.8	0.7
Education	1.9	1.1	0.8	0.1	0.1	0.0
Business	0.1	0.0	0.0	0.0	0.0	0.0
All Students:	**0.9**	**0.3**	**0.2***	**2.8**	**1.9**	**1.5***

*These figures have been corrected to match 1983 Cooperative Institutional Research Project data as cited by Bowen and Schuster, Table 11-1, p. 203.

Source: Kenneth C. Green, "Entering Freshmen and the Migration of Talent Across Careers and Academic Disciplines, 1973-1984," 1985 (unpublished), as cited in Bowen and Schuster, American Professors, p. 204 (Table 11-2).

FIGURE 10

PERCENTAGE OF PHI BETA KAPPA MEMBERS IN SELECTED OCCUPATIONS
BY PERIOD OF ELECTION TO PHI BETA KAPPA

(As Surveyed in 1984)

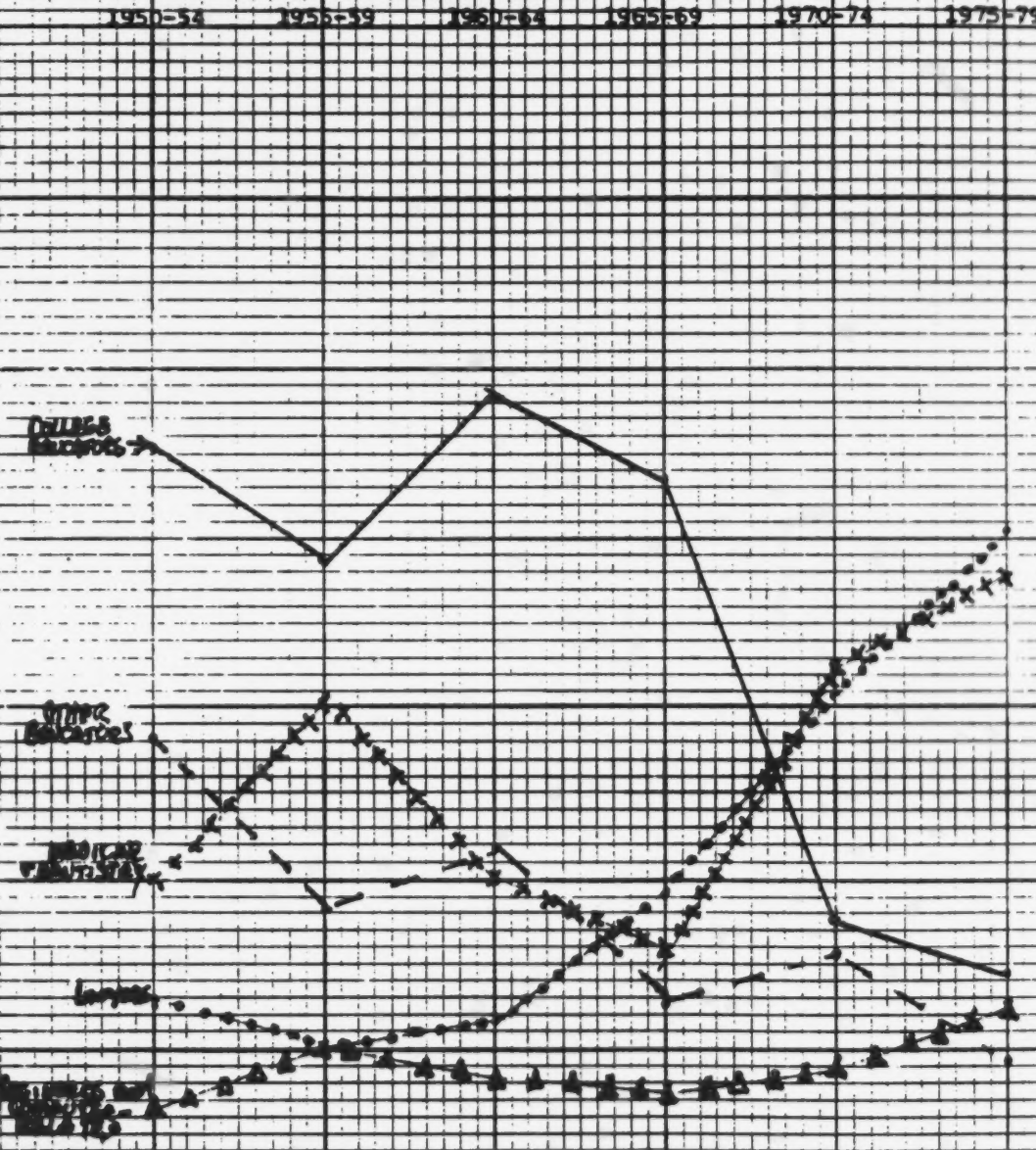


TABLE 20

Percentage of Phi Beta Kappa Members[1] in Selected Occupations, by Period of Election to Phi Beta Kappa

	1950-54	1955-59	1960-64	1965-69	1970-74	1975-79[2]
Education Occupations						
Educator: College	22.6%	19.4%	24.2%	21.7%	8.6%	7.2%
Educator: Element.	4.3	2.0	1.7	1.2	3.9	2.9
Educator: Second.	8.6	6.1	8.3	4.2	3.5	1.0
School Administra.	1.1	1.0	0.8	0.0	0.4	0.7
SUB-TOTAL: EDUC.	36.6%	28.5%	35.0%	28.1%	16.0%	11.5%
Other Professional						
Accountant/Actuary	1.1%	0.0%	3.3%	2.4%	2.4%	1.0%
Clergy	2.2	3.1	2.5	0.0	2.4	0.7
Engineer	2.2	2.0	0.8	0.6	0.8	2.0
Lawyer/judge	6.5	5.1	5.8	9.6	15.2	20.2
Physician/dentist	10.0	15.3	10.0	7.8	16.1	18.9
SUB-TOTAL: Oth.Prof.	22.0%	25.5%	22.4%	20.4%	37.0%	42.8%
Other Selected Careers						
Business[3]	14.0%	9.1%	9.2%	9.0%	12.3%	9.5%
Computer-Related	1.1	3.1	3.3	3.0	3.5	4.2
Journalist/writer	1.1	3.1	1.7	1.2	2.7	3.6
Social/Welfare Work	1.1	2.0	0.8	3.6	0.8	1.6
Other Occupation	12.3	23.6	22.4	27.1	22.6	22.3
Homemaker	11.8	5.1	6.7	8.4	4.7	4.2

NOTES:

1. Phi Beta Kappa is the national honor society for baccalaureate-degree granting institutions in the U.S. Each institution with a Phi Beta Kappa Chapter, elects members from within the top 15% (in academic standing) of each class.
2. As the authors of the survey from which this table is adapted point out, data after 1979 are not truly reflective since many aspirants to some careers were still enrolled in graduate or professional schools.
3. Business is not included in the professions because the survey data aggregated clerical, sales, proprietorship, and executive careers in this category.

Source: Howard R. Bowen and Jack Schuster. American Professors. New York: Oxford University Press, 1986. Table 11-18 (p.227). The data are from a 1984 national survey of Phi Beta Kappa recipients conducted by the authors.

SECTION VI

Governance: State, Institution, Faculty

The tables in this section focus on three distinct aspects of governance in U.S. higher education.

There are a variety of ways to describe the governing authorities of state institutions, and I have selected a table prepared by the Education Commission of the States that distinguishes three types of governance structures for public institutions at the state level:

1) Consolidated Governing Boards (23 states). In general, these Boards have final authority for program approval and expansion, presidential appointments and other personnel matters, budgets and other resources in all public institutions. Of course, "final authority" on budgets is exercised within the confines of appropriations by state legislatures, and the degree to which these Boards elect to be interventionary differs from state to state. Depending on the structure, size, and politics of public higher education in a state, there may be a consolidate board for each major sector, e.g. senior universities, state colleges, community colleges.

2) Coordinating Boards (28 states). The authority of these Boards is more limited than that of the Consolidated Boards, and ECS distinguishes six (6) combinations of authority with respect to program review and approval, on the one hand, and budget on the other. It is obvious from the Table that some states have a Coordinating Board in addition to a Consolidated Board. This condition is best illustrated by Florida, where a State Department of Education responsible for all levels of education functions in a Coordinating role at the same time that a Board of Regents for all senior public institutions functions in a Consolidated role. The powers (regulatory or advisory) of these Boards are determined by state legislatures.

3) Planning Agencies (3 states). These "boards" have no program or budget authority.

American institutions of higher education are, legally considered, independent, public corporations. With the general exception of branch campuses, each has a board of trustees whose autonomy to oversee the operations and administration of the institution derives from a charter issued by the state in which the institution is incorporated. While the powers of trustees differ from institution to institution, as well as by what the legal system terms "custom-and-usage," in general, trusteeship is a serious business, and the composition of boards of trustees is of more

than passing interest. Given the fiscal responsibilities of most boards, it is not surprising to find 37% of the membership drawn from the business community and another 7% from the legal community. As the tables indirectly indicate, those board members from the higher education community itself (7%) are most likely to be faculty and student representatives by designation in the by-laws of the boards.

As for the key issue of faculty participation in faculty and other campus governance structures, the questions relate to frequency and and level. Beyond the academic department, these differ markedly by institutional type. But what these data do not show is the degree to which faculty participation in traditional governance processes is influenced by the existence of collective bargaining agreements, i.e. the presence of a faculty union whose power and/or influence may exceed that of the local faculty senate.

Authority of State Boards of Higher Education
1986

Consolidated Governing Board	Coordinating Boards							Planning Agencies
		With Program Approval Authority			With Program Review and Recommendation Authority Only			
Board for All Public Institutions	Board for All Senior Institutions--Separate Agency for Community Colleges	Consolidated or Aggregated Budget	Budget Review and Recommendation	No Statutory Budget Role	Consolidated or Aggregated Budget	Budget Review and Recommendation	No Statutory Budget Role or Program Approval	
Alaska Ga. Hawaii Idaho(a) Maine(c) Mass. Mont.(a) Nev. N.D. R.I. S.D. Utah W. Va. Wis.	Ariz. Florida Iowa Kan. Miss. N.H.(b) N.C. Ore. Wyo.	Ala. Conn. Ill. Md. N.J. Ohio Okla. S.C.	Colo. Ind. Ky. La. Mo. N.M. Pa.(a) Tenn. Texas Va. Wash.	N.Y.(a)	Ark. Fla(a)(b)	Alaska (b) Calif. Mich.(a) Minn. Ore.(b)	N.H.(b)	Del. Neb. Vt.

Notes:
(a) States with agency responsible for all levels of education.
(b) Separate statutory coordinating agency.
(c) Maine Maritime Academy and Vocational-Technical Institutes are under other boards.

Education Commission of the States
11/85

TABLE 21

TABLE 22

Governing Boards of U.S. Institutions of Higher Education

	PUBLIC		PRIVATE		
	Single Campus	Multi-Campus	Single Campus	Multi-Campus	TOTAL
Total Number of Boards	597	154	1453	33	2237
Total Number of Campuses	597	914	1453	75	3039
Ave. Size Serving Board	8.2	10.4	27.9	30.2	21.5
Total Number Serving	4879	1602	40,500	1013	47,994
% Women	24.1%	20.0%	19.7%	14.5%	
% Minority	15.2%	9.6%	9.2%	4.0%	
% Not Holding Bachelor's	15.4%	10.3%	6.3%	6.5%	
% Member of 2+ Boards	3.7%	5.9%	10.4%	12.3%	
% Alumni	7.1%	31.1%	30.3%	38.3%	
% Faculty	0.1%	0.7%	1.4%	2.4%	
% Students	0.9%	3.1%	1.1%	2.0%	
% From Designated Constituencies	45.2%	39.6%	42.1%	36.2%	

Source: Composition of Governing Boards, 1985. Washington: Association of Governing Boards, 1986.

FIGURE 11

Primary Occupation of Board Members

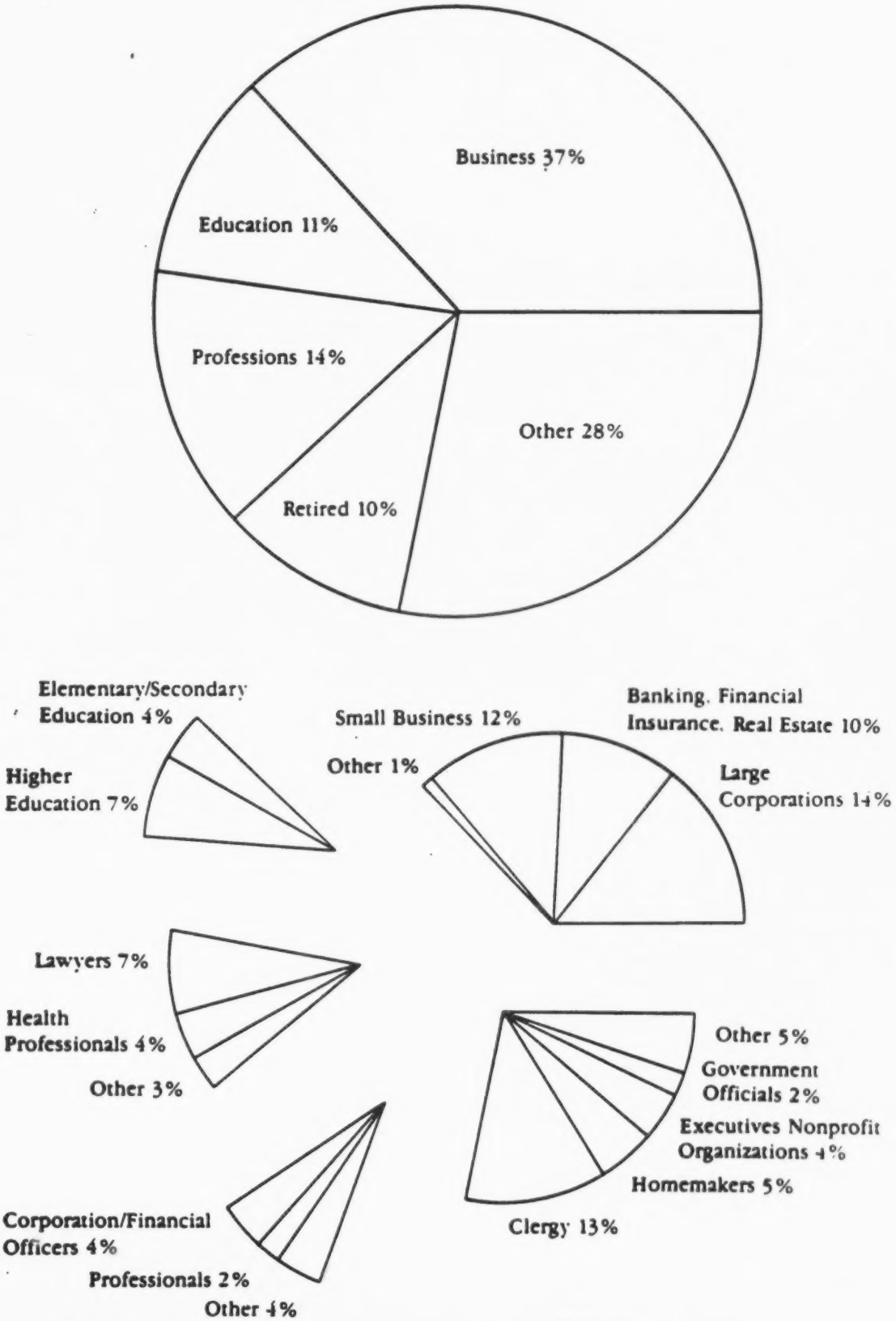


TABLE 23

Faculty Participation in Campus Governance, 1984

	All	Pub.	Priv.	Research Univ.	Doctor. Univ.	Compreh. College	LibArts College
Departmental Level:							
Usually	86%	86%	87%	85%	86%	86%	91%
Sometimes	11	11	9	11	10	10	7
Never	3	3	4	4	4	4	2
Faculty Senate:							
Usually	18%	12%	36%	9%	13%	17%	55%
Sometimes	38	39	36	39	38	41	28
Never	44	49	28	52	49	42	17
Campus-Wide Faculty Committee:							
Usually	25%	21%	38%	12%	20%	29%	55%
Sometimes	44	46	35	46	48	45	27
Never	31	33	27	42	32	26	18
Administrative Advisory Committee:							
Usually	16%	15%	20%	16%	15%	15%	25%
Sometimes	37	37	34	37	37	37	33
Never	47	48	46	47	48	48	42

Source: Carnegie Foundation for the Advancement of Teaching, National Survey of Faculty, 1984, as cited in Ernest L. Boyer, College, Table 46, p. 243.

Section VII

Special Topic: Assessment

The concern with the outcomes of higher education, discussed briefly in the introduction to Section V, has spawned considerable activity at both state and campus levels with respect to assessment. In current U.S. usage, "assessment" is an umbrella term referring to a variety of measurements of student learning conducted either (1) by an individual or agency other than the faculty member(s) responsible for instruction, or (2) by faculty members responsible for instruction, but with common instruments or methods across courses or programs. Either way, the assessment movement calls into question both the validity and reliability of the U.S. system of "continuous classroom" grading (let alone the usefulness of the "information" such grading provides) In its normative formulations, assessment is described as an "information system" that should provide students, faculty, departments, and institutions with sufficiently detailed data to assist in improving teaching and learning.

There are four (4) general purposes of assessment, and each determines methodology, instrumentation, and subject universe: placement, certification, program/course evaluation, and institutional accountability. All these purposes (and their corresponding programmatic implications) are reflected in the three tables in this section.

Table concerns formal state policies for post-matriculation assessment in public IHEs. As recently as 1984, only eight (8) states had any formal post-matriculation assessment policy whatsoever.

The other tables present the campus view of assessment in terms of attitudes, practices, and current developments. Observers will note that resistence to assessment is strongest in doctoral-degree-granting universities, and that respondants to the "Campus Trends" surveys are occasionally confused as to what can be assessed and how. A number of national programs are underway to provide technical assistance and instruction to those faculty and institutions struggling to define and realize the role of assessment in their operations.

Current State Assessment Policies for Public Institutions of Higher Education

Required Degree Qualifying Test	Required Academic Progression Test	Required Screening Teacher Ed Test	Required Placement Exams for Freshmen[1]	Requires Instits. to Establish Program	Encourages Instits. to Establish Program	Conducts Alumni & Follow-up Surveys	No Formal Policy for Post-Matric. Assessment[8]
California[2]	Florida*[4]	Arizona*	California	Colorado[3]	Alabama	Alaska	Delaware
Georgia*	New York	Arkansas*	Connecticut	Connecticut	Georgia	Maryland	Idaho
		Connecticut*	Florida*	Illinois	Louisiana	No. Carolina	Indiana
		Kansas*	Georgia*	Missouri		Rhode Island	Iowa
		Michigan	Hawaii*	New Jersey[5]			Kentucky
		Minnesota*	New Jersey*	S. Dakota[6]			Maine
		Mississippi*	New York	Tennessee[7]			Mass.
		No. Carolina*	Tennessee	Virginia			Montana
		Oklahoma*	Wyoming				Nevada
		Oregon*					New Hampsh.
		Texas*					New Mex.
		West Virg.*					No. Dakota
							Ohio
							Pennsylvania
							So. Carolina
							Utah
							Vermont
							Washington
							Wisconsin

Notes:

1. Defined as placement examinations given after acceptance to college, and for "entering students," and focused principally on "basic skills."
2. California State University System only (19 campuses).
3. Institutions not in compliance by 1990 may have up to 2% of their state appropriation withheld.
4. City University of New York only.
5. Statewide program using samples of students from public institutions.
6. Statewide program with designated instruments, but substitution by individual institutions permitted.
7. Statewide program with both funding incentives and some common measures.
8. Some of these states have policies under consideration, others have pilot programs, and still others confine formal assessment programs to pre-collegiate and college admissions processes.

* Same assessment instrument mandated in all participating institutions/programs.

Source: Carol M. Boyer, et al. Assessment and Outcomes Measurement: a View from the States. Denver: Education Commission of the States, 1987. Table adapted from individual state profiles.

Assessment: Attitudes and Realities

TABLE 25

	2-Year Colleges		Baccalaureate Colls.		Universities	
	Appropriate[1] Method	Method In Use[2]	Appropriate[1] Method	Method In Use[2]	Appropriate[1] Method	Method In Use[2]
College-level skills tests	61%	23%	70%	26%	55%	19%
Tests in General Education	48	15	71	13	51	15
Comprehensive Exams in Major	46	7	82	26	67	25
"Higher-Order" Skills in:						
"Critical Thinking"	69	15	89	26	79	17
Quantitative Skills	74	14	88	27	83	24
Oral Communication	83	26	88	29	82	23
Writing	85	40	91	50	87	43
Placement Tests in:						
Mathematics	95	98	95	74	89	82
English	95	97	88	79	89	79
Reading	93	89	78	52	71	52
Other Skills	75	38	59	34	64	36
Pre & Post Tests: Remedial	85	69	78	63	67	58
"Value-Added" Measures	62	9	80	10	64	9

Notes: (1) Opinions of campus administrators (percentage agreeing with each type). Weighted survey data from 365 institutions (125 2-year colleges, 71 baccalaureate colleges, and 165 universities).

(2) Either for all or some students. The purpose of the assessment will determine whether the universe consists of all students, a sample, or a discrete sub-group. The 1987 "Campus Trends" survey distinguishes between "all" and "some," but the complexities of local purpose do not allow for an easy interpretation of that data. Hence, this table is drawn from the 1986 survey.

Source: Elaine El-Khawas. Campus Trends, 1986. Washington: American Council on Education, 1986, Tables 6A and 6B, p. 15.

Campus Opinions and Developments with Respect to Student Assessment, 1987

(percentage of campus administrators agreeing with each statement)

	2-Year Colleges	Baccalaur. Colleges	Comprehens. Colleges	Doctoral Universities	All Institns.	All Public	All Private
Opinions:							
o Most faculty would support assessment	76%	63%	63%	41%	69%	71%	66%
o No clear sense of what to assess	35	57	59	64	47	40	55
o No good instruments for our programs	38	47	41	57	42	39	47
o Assessment likely in the next few years	85	78	74	53	79	85	73
Campus Developments:							
o Assessment in individual courses	55	42	33	33	47	49	44
o In major fields	41	48	44	35	43	45	40
o For "general education" knowledge	43	52	40	43	45	48	42
o For general academic competencies	53	52	48	38	51	56	44
o For the entire curriculum	40	38	24	13	36	39	31
Campus Discussions:							
o Whether to assess	53	62	53	52	56	57	54
o Outcomes to assess	72	79	74	69	74	78	69
o Assessment methods	69	76	71	62	71	76	66
o How to tie assessment to program evaluation	69	67	63	52	67	70	62
o How to tie assessment to instruction	70	69	62	59	68	72	62

Source: Elaine El-Khawas. Campus Trends, 1987. Washington: American Council on Education, 1987, adapted from Table 1, p. 16.